# STANDARDIZATION

*Formerly Industrial Standardization*

**News Magazine of the American Standards Association, Incorporated**

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# Readers Write

## Sweden Reports Interest in U. S. Standards

*Swedish Standards Association*
*Stockholm, Sweden*

*Gentlemen:* Standardization in the United States receives a great deal of attention in Sweden. Therefore, we request you to furnish us with a complete list of industrial, governmental, and scientific organizations issuing standard specifications in your country.

NILS LUNDQVIST

• • Because of the tremendous amount of work carried on, it is almost impossible to give a complete list of all industrial, governmental, and scientific organizations issuing standards in the United States. However, in replying to Mr. Lundqvist, attention was invited to the *National Directory of Commodity Specifications* published by the U.S. Department of Commerce. Containing more than 1550 pages (together with its recent supplement), it gives information regarding standard specifications for practically all conceivable commodities used in the United States. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C.

## Are American Standards Obsolete Before Approval?

*Phelps Dodge Copper*
*Products Corporation*
*New York, New York*

*Gentlemen:* I frequently hear criticisms of ASA along the line that standards are obsolete by the time they reach the status of American Standards. I do not know how justifiable these criticisms may be but suspect that they apply to a very small fraction of ASA output. However, it seems that it might be possible to silence these criticisms if standards could be made in two parts, one part of permanent value, to be approved as an American Standard, and another part of transitory value, to be approved only by its sponsor or sponsors and issued as the sponsor's standard.

W. A. DEL MAR

*Habirshaw Cable and Wire Division*

• • The problem of speeding up work is one which has been investigated time and time again in ASA. The answer has always been the same. As pointed out by T. E. Veltfort in this issue (page 65), the ASA can act as rapidly as industry and the sponsors and other organizations that speak for industry want it to act. No standard

## Company Members

More than 2100 companies hold membership either directly or by group arrangement through their respective trade associations

## Readers Write

*Continued*

should become fixed or permanent. All standards, regardless of their stage of acceptance, should be subject to change if and when new information and other conditions indicate that a change is desirable. A standard can reach the status of "American Standard" within a relatively short period of time after it reaches ASA provided its consensus of acceptability is clearly indicated.

In an encyclopedia article, Dr P. G. Agnew, now consultant to ASA, discussed this question:

> "Sound standardization is dynamic, not static. It means, not to stand still, but to move forward together. By facilitating the flow of products through industry and commerce, standards help to maintain what an engineer would call dynamic stability in industrial processes—just as a motor car in motion or an airplane in flight will respond with nicety to the slightest touch on the controls, and will right itself instantly, following any slight disturbance—such as a bump in the roadway or a gust of wind—provided the machine has dynamic stability.

## Give the Ancients Their Due!

Although Mr Edmund A. Pratt gave a mighty nice plug to the ancient Romans in his article, "*Give the Ancients Their Due* (page 48, February 1949), we find, to our regret, that he himself failed to receive the identification due him. Readers who enjoyed Mr Pratt's article may be interested to know that he is a Consulting Engineer with offices in New York City, and is the official representative of the International Organization for Standardization in its relations with the Economic and Social Council of the United Nations.

### Our Front Cover

Working on a commutator at the Westinghouse Electric Corporation's plant at Pittsburgh. Commutators and other similar equipment are designed and built in accordance with detailed instructions contained in the Westinghouse Design Standards Book. See article on The Function of Standards at Westinghouse, page 60.


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Standardization is dynamic, not static. It means not to stand still, but to move forward together.


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*Bureau of Standards, Macy's, N. Y.*

Tests are conducted in a department store laboratory to determine the hydrostatic pressure resistance of a raincoat.

- Should consumer goods be tested under "use" conditions?
- Should the standard on sheets include the shrinkage factor?
- What are the common wants to be satisfied by the standard?

# How Good Are Testing Methods For Consumer-Used Textiles?

***By Dr Jules Labarthe, Jr***

THERE are in existence many standards for goods sold to the ultimate consumer. The American Standards Association, American Society for Testing Materials, American Association of Textile Chemists and Colorists, Federal Specifications Board, Commercial Standards Division of the National Bureau of Standards, and other national bodies have been active in this field for many years. Then, too, the mail order houses and some of the more progressive department stores have standards for goods sold to their customers which may be based either upon the standard test methods and standards of quality developed by one or another of the national technical organizations or by their own methods of evaluation and definition.

Looking at this imposing list, it would seem that the ultimate consumer was being pretty well guided in her choice of goods and protected in regard to quality, especially in the field of textiles. A sober second thought gives an entirely different picture, however. Those of us who are engaged in the daily evaluation of textile products for the customer of the retail store are far from happy about the status of the existing standards as they apply to the consumer use-experience of our customers in buying goods which have been selected by us and by the store buyers as being truly best values at the price, based on today's methods of measurement.

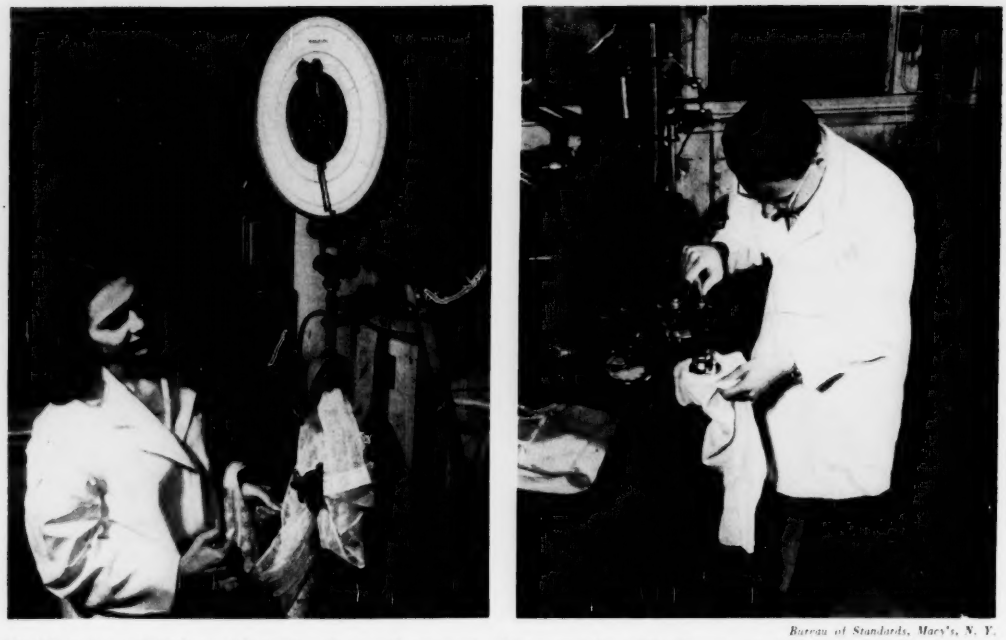
The essential point is that our standards, whether they be test methods or ratings based upon interpretation of the standard test results, have always been intended for customers' or purchasing agents' guidance. This customer may be an industrial organization, an institution, a distributor, or the ultimate consumer. The standards used by the producer of the goods have presupposed that the customer would evaluate the purchase by the same procedures, and that acceptance or rejection would be based on the results of this standard evaluation. Tests have invariably been applied to new goods and in textiles, at least, to goods in the form of yardage rather than finished articles of wear for use by the ultimate consumer. I scarcely dare mention the statistical validity of such tests except as they are performed by the manufacturer who habitually checks his products for maintenance of quality control. The retail store laboratory, commercial testing laboratory, and institutional laboratory test few samples and simply hope that they are representative of the average quality of that manufacturer.

When we view laboratory testing and evaluation of textiles by existing standard test methods, we reluctantly come to the conclusion that we literally have no standards for ultimate consumer goods. The standards go only so far in establishing the relative original quality of various lines of textile merchandise being considered by a store laboratory. These goods are going to be worn, used, or otherwise consumed by the customer; this means that any standard test presuming to apply to ultimate consumer goods must always include combinations of the many factors of use-experience, and particularly the ever-present requirements of cleansing and pressing, and exposure to the elements such as light, moisture, heat, and urban atmosphere.

***Dr Jules Labarthe, Jr,*** *is a Senior Fellow at the Mellon Institute of Industrial Research, University of Pittsburgh. His participation in ASA standards work extends over several years. As a representative of the National Retail Dry Goods Association, he serves on the Consumer Goods Committee, top ASA advisory and technical committee in the consumer field, and on the sectional committees concerned with sheets and sheeting, L4, bedding and upholstery, L12, and textile test methods, L14. He is also an alternate for the American Society for Testing Materials on the sectional committee dealing with definitions of terms used in retailing, Z36.*

## What Does the Consumer Want?

Immediately we come up against the problem that no one yet knows exactly what the ultimate consumer wants or needs by way of textile performance in actual use even for such basic qualities as color fastness to washing, light, perspiration, fume fading, etc, or resistance to wear or abrasion, or for degree of permanence of any special finish which may have been applied to the goods.



*Bureau of Standards, Macy's, N. Y.*

**Machine above, left, is used in testing the tensile strength of lace curtains while the one at right measures the bursting strength of knit underwear. Both qualities are of importance to consumers, assuring greater serviceability of the fabric.**

For all these we have standard test methods, but several do not even approximate experience in use.

Wants and needs are not necessarily the same, and to further complicate the picture, I think we should consider that between different price lines the wants and needs might differ. Surely in the lower price lines, the basic want should be durability whether it be in the fabric, the finish, or the color, and the need should also be paramount for the same qualities in the lower prices. In higher price ranges, the want of durability may be just as great in the mind of the consumer, but the need may not be as great.

It is devoutly to be hoped that the American Society for Testing Materials may be able, through its Advisory Committee on Ultimate Consumer Goods, to come out with some answers on consumer wants and needs for several kinds of goods and articles which may serve as a pattern for others. Similarly, there must be a vast store of well established data in the hands of universities and schools of home economics, which will shed further light on this perplexing problem. Department store laboratories, and perhaps the bureaus of adjustment, may be able to supply some information based upon what consumers have not liked about goods they have bought in the past. Nor can we overlook the vast amount of experience-data collected by the American Institute of Laundering.

## A Complicated Problem

The problem grows more complicated daily. New types of washing machines for home or for commercial use; the development of new detergents and water softening agents; wider use of pigment dyes, crease resistant finishes, and other textile finishing processes all complicate the picture when it comes to determining in the laboratory standard methods for establishing wash fastness; dimensional stability; retention of special finishes; and other factors which consumers want. Any given fabric may satisfy both the standard laboratory method and the ideal use and experience standard for one feature and fail for others. Who is to say that a fabric satisfying certain intermediate degrees of laboratory performance, not only for strength, tear, and abrasion but also for these use-experience tests, shall not go into the manufacture of goods requiring a higher performance for satisfactory consumer use? Surely we must have stronger and more realistic standards of test method and interpretation and specification if we are to provide realistic, accurate, helpful consumer goods standards of mutual benefit to the producer, distributor, and the consumer.

We have at long last an American Standard on sheets. Certainly a sheet which is generally white and whose use is clearly defined should be a simple matter for standardization as to method of test, classification as to type, and specification as to performance compared with all the complicating factors of other end-use products of textiles. Yet this standard was so long in development that very few of those initially concerned with the project were still with it when the standard was evolved last year. Consumers are not very well pleased with it even now, and I think some store laboratory people are not pleased with it for the reason that it does not include any statement as to shrinkage on washing. I am not convinced that shrinkage in sheets is an important factor in the basic standard. In our laboratory, we have some 9,000 textile complaints neatly tabulated on punch cards; only 12 of these refer to sheets at all, and in not a single one was shrinkage the cause of com-

plaint. This represents the collection of the last seven years of the 18 years of the Kaufmann Fellowship at Mellon Institute, and certainly we have sold lots of sheets during that time. I would, therefore, classify shrinkage as a want of the consumer but not a need. However, a low shrinkage on the sheet produced by a manufacturer should surely constitute a plus value which he could use to advantage on his label.

There is considerable confusion in the mind of many people as to just what a standard is. This journal has repeatedly emphasized that standards are measurements, and that they can be made more accurate and realistic in terms of the use-experience of the article defined by the standards as we live with them and use them. The best and most complete standard is no better than the worst if neither is used by the producers, distributors, and consumers.

I left until the end the very pertinent question "Who Wants Standards?" I think every one wants them when he can see a use for standards. The producer of the goods must be convinced that standards will permit him to save money in production costs by concentrating on fewer fabric constructions and improving the use performance characteristics of these constructions, and assuring more uniform quality. The manufacturer of the garment or article will benefit by knowing more about the behavior of the dye or the finish in actual use, as well as the strength and durability of the fabric so that he will know whether or not a fabric conforming to one set of standards should or should not be used for the end product he manufactures. The distributor will benefit by lower costs, by being able to specify more rigidly the performance he requires for these consumer goods, and probably even more through fewer returns. The ultimate consumer will benefit by getting goods which more fully live up to his wants and needs at whatever price he pays.

### Need Fresh Viewpoint

It is essential that in the development of realistic consumer goods standards all parties must cooperate. I think the American Standards Association should take a fresh viewpoint in this field so as to be able more quickly to help in the development of an American Standard for any commodity in the field of consumer goods. My suggestion would be that a task committee of technically qualified individuals representing each group (fabric producer, manufacturer of the article, distributor, and consumer) of such reputation as to carry weight in the group he represents should meet in order to determine the following facts. Each should have as much data as possible pertinent to standards at present being used in the evaluation of a commodity, together with other laboratory procedures of nonstandard nature, and data as to consumer experience in the form of university studies, adjustment bureau reports, etc.

1. What are the common or nonconflicting wants to be satisfied by the standard?
2. What are the needs of each with regard to the standard?
3. What would the standard look like if it satisfied the essential needs common to all?
4. What would the standard look like after compromising to include as many as possible of the wants which seemed at first to be in conflict?

After this is done for a number of commodities, we might find that consumer goods standards which more truly measure performance in use could more quickly be developed through the Consumer Goods Committee and that they would be used by all parties concerned. No standard is the final word. All must be adjusted as new techniques of manufacture, new dyestuffs, new methods of construction, wider use of fiber blends, extension of special finishes, and changes in techniques of dry cleaning or laundering come about.

Standards aren't carved in blocks of stone. Standards can be improved as necessity and experience dictate and as more is learned of what the consumer actually needs or wants. We must not forget that these are standards for products made for and used by the ultimate consumer.

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# "What Good Are Standards?" 11 Papers Now Published As a Book

The series of papers on the subject "What Good Are Standards?" presented at the 1948 annual meeting of the American Standards Association has now been published in a single pamphlet. The papers include discussions of such important problems as the legality of standardization, the standardization work of the Munitions Board, and the functions of standardization in such company operations as purchasing, manufacturing, and marketing. The importance of standardization to wholesalers and retailers, and to the ultimate consumer, as well as to manufacturers, is taken up by authorities in each field.

The publication includes the following:

**Is Standardization Legal?** by John F. Sonnett, Partner, Cahill Gordon Zachry and Reindel, Former Assistant United States Attorney General

**How the Munitions Board is Coordinating Army, Navy, Air Force Standards** by The Honorable W. John Kenney, Under-Secretary of the Navy

**Is Standardization an Engineering, Purchasing, or Production Function?** by W. P. Kliment, Engineer of Standards, Crane Company

**Interrelation of Standardization and Purchasing Activities** by Arthur J. Beck, Editor of Standards Catalogue, Detroit Edison Company

**Methods of Evaluating Savings from Standardization** by William Floyd, Operating Research, General Operating Office, Sears Roebuck and Company

**Practical Answers to a Practical Question—What Good Are Standards?** by Earl O. Shreve, President, United States Chamber of Commerce

**What Good Are Standards in Specifying and Purchasing Manufacturing Materials?** by Vincent De P. Goubeau, Director of Materials, RCA Victor Division, Radio Corporation of America

**What Good Are Standards in Manufacturing?** by Harold L. Hoefman, Vice-President, Link-Belt Company

**What Good Are Standards in Marketing?** by R. C. Sogge, Executive Department, General Electric Company

**What Good Are Standards to Wholesalers and Retailers?** by Gerald C. MacDonald, Manager, Merchandise Testing and Inspection Department, Montgomery Ward and Company

**What Good Are Standards to the Ultimate Consumer?** by Carol Willis Moffett, Director, American Standards Association

Copies can be obtained from the American Standards Association at $1.00 for nonmembers. A special price of 75 cents each is offered to members of the American Standards Association. For orders of 50 or more copies, the pamphlet is offered at half price or $.50 each, plus shipping charges, for both members and nonmembers.

*Westinghouse Electric Corp.*

**Westinghouse workers are protected from occupational hazards by requirements issued in Safe Practice Data Sheets, many of which specify American Standards. This worker wears head protection and clothing conforming to an American Standard.**

# The Function of Standards

## Its manufacturing and purchasing departments depend upon specifications,

***By Thomas Spooner***

IN this discussion the development of standards and the mechanism of producing and maintaining them will be incidental. The emphasis will be placed on the use and value of standards to the organization.

Materials and Process Standardization has been an important factor in Westinghouse procedures for more than 45 years. The value of standardization is difficult or impossible to estimate even approximately in dollars, but Westinghouse management in all that time has never seriously questioned that it was worth the cost. If its specifications, standards books, and identification systems were suddenly abolished, manufacturing and purchasing would promptly come to a standstill.

With a few minor exceptions, Westinghouse standardization is primarily an engineering function. While a public service corporation may decide properly that this should be a Purchasing Department activity, it seems best in a complex manufacturing organization to have this under the general guidance of the vice-president in charge of engineering or his equivalent.

### Standards Section Products

The Standards Section of Headquarters Engineering prepares and distributes the following publications:

1. Materials Standards Book
2. Design Standards Book
3. Insulation Data Book
4. Magnetic Curve Book
5. Carbon Brush Book
6. Standard Tabulated Drawings
7. Drafting Manual
8. Engineering Manual
9. Purchasing Department Specifications
10. Materials Cards
11. Process Specifications
12. Finish Specifications
13. Material Test Specifications
14. Safe Practice Data Sheets
15. Trade Name Index
16. Finish Charts
17. Inspection Tests on Materials
18. Bimonthly Materials Letter
19. Standards News
20. Miscellaneous Memoranda

It is also responsible for nameplate design and performs certain other drafting functions.

The first five books, together with the sixth item, contain information of interest primarily to the designer. Before deciding on the size and kind of material to use, he consults the Materials Standards Book to determine the properties, cost, and availability. The Tabulated Drawings cover special component parts which are already designed and can be designated by style numbers. They cover such items as terminals, special bolts and nuts, connectors, and the like.

The Design Standards Book contains information on commutator designs, fits and tolerances, shafts, gears, coils, bearings, plastics, ceramics, bushings, springs, surface roughness, and a multitude of tables and other

*Westinghouse Electric Corp.*

**These cabinets are painted in accordance with standard finish specifications, issued as a guide to quality control, safety, and manufacturing departments.**

# at Westinghouse

## standards books, and identification systems

data which are needed in design work.

The Engineering Manual is a guide for the engineer in the conduct of his work and gives him a picture of the functions of the other branches of the organization, such as Sales and Accounting, as they affect engineering. It insures uniformity of engineering practice throughout the organization.

The Drafting Manual is a guide for the designer and draftsmen to insure as great uniformity as possible in the production of drawings. It forms a part of the Design Manual in addition to being distributed separately.

All standard materials purchased by Westinghouse are given a Purchasing Department specification number or a materials number, both in the same series. These materials must be bought from approved suppliers. If the requirements are complicated, a Purchasing Department specification is prepared and distributed to all divisions. If a material can be bought by brand name or by a simple description, it is given a materials number only. Each Purchasing Department specification and materials number product has a card giving a brief description of the material and the approved suppliers. These cards are filed serially and a group of index cards alphabetically.

In order to guide the manufacturing departments and the quality control and safety people, Process and Finish Specifications are made available with detailed descriptions of the shop processes involved.

Safe Practice Data Sheets are provided by the Industrial Hygiene Department and are referred to extensively in the Process Specifications.

In order to keep these publications up to date, a bimonthly Materials Letter is distributed covering changes in the specifications.

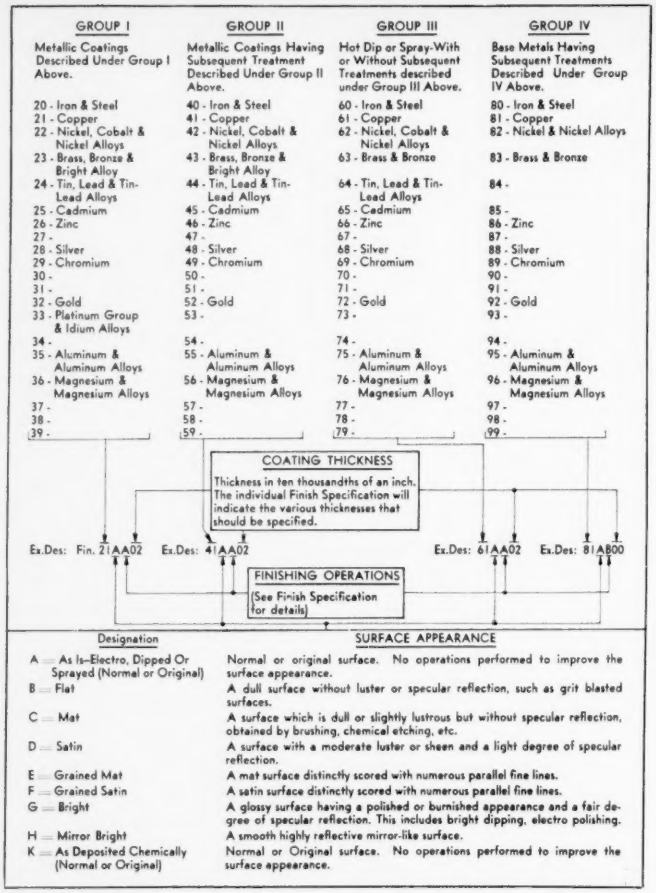
*Standards News* is a small publication issued several times a year and covering items of particular interest to Materials and Standards Engineers. It also contains biographical data concerning these men, together with new appointment information.

In order to insure uniform nameplates throughout the Corporation, most nameplates are designed by the Standards Section and, for those Divisions which design their own, copies are sent to headquarters for check and file.

### Functions of Standards Section with Reference to Other Departments

**Purchasing.** Westinghouse standardization is an aid to, but not subordinate to purchasing. It is the function of the Standards group to maintain the list of approved suppliers from whom Purchasing may order. Standards engineers are therefore free to contact suppliers directly when the need arises. In order to

**Thomas Spooner,** manager of the Engineering Laboratories Standards Department, Westinghouse Electric Corporation, is not only well known in ASA circles but also has a national reputation as member of the Industry Advisory Committee of the Federal Specifications Board and for his work on magnetic materials. His book on Properties and Testing of Magnetic Materials published by the McGraw-Hill Book Company in 1927 is one of the authoritative texts on this subject. Mr Spooner received his B.S. degree from the Massachusetts Institute of Technology in 1909, and his degree as Doctor of Science from Bates College in 1945. He is a member of the American Society for Testing Materials, a fellow of the American Institute of Electrical Engineers and of the American Physical Society, and member of the Pittsburgh Physical Society. He is member of the Administrative Committee of the ASA Company Member Conference and was chairman of the subcommittee of the Standards Council which has just submitted recommendations for uniform sizes of American Standards.


GROUP I
Metallic Coatings Described Under Group I Above.
20 - Iron & Steel
21 - Copper
22 - Nickel, Cobalt & Nickel Alloys
23 - Brass, Bronze & Bright Alloy
24 - Tin, Lead & Tin-Lead Alloys
25 - Cadmium
26 - Zinc
27 -
28 - Silver
29 - Chromium
30 -
31 -
32 - Gold
33 - Platinum Group & Idium Alloys
34 -
35 - Aluminum & Aluminum Alloys
36 - Magnesium & Magnesium Alloys
37 -
38 -
39 -
GROUP II
Metallic Coatings Having Subsequent Treatment Described Under Group II Above.
40 - Iron & Steel
41 - Copper
42 - Nickel, Cobalt & Nickel Alloys
43 - Brass, Bronze & Bright Alloy
44 - Tin, Lead & Tin-Lead Alloys
45 - Cadmium
46 - Zinc
47 -
48 - Silver
49 - Chromium
50 -
51 -
52 - Gold
53 -
54 -
55 - Aluminum & Aluminum Alloys
56 - Magnesium & Magnesium Alloys
57 -
58 -
59 -
GROUP III
Hot Dip or Spray-With or Without Subsequent Treatments described under Group III Above.
60 - Iron & Steel
61 - Copper
62 - Nickel, Cobalt & Nickel Alloys
63 - Brass & Bronze
64 - Tin, Lead & Tin-Lead Alloys
65 - Cadmium
66 - Zinc
67 -
68 - Silver
69 - Chromium
70 -
71 -
72 - Gold
73 -
74 -
75 - Aluminum & Aluminum Alloys
76 - Magnesium & Magnesium Alloys
77 -
78 -
79 -
GROUP IV
Base Metals Having Subsequent Treatments Described Under Group IV Above.
80 - Iron & Steel
81 - Copper
82 - Nickel & Nickel Alloys
83 - Brass & Bronze
84 -
85 -
86 - Zinc
87 -
88 - Silver
89 - Chromium
90 -
91 -
92 - Gold
93 -
94 -
95 - Aluminum & Aluminum Alloys
96 - Magnesium & Magnesium Alloys
97 -
98 -
99 -
COATING THICKNESS
Thickness in ten thousandths of an inch. The individual Finish Specification will indicate the various thicknesses that should be specified.
Ex.Des: Fin. 21AA02
Ex.Des: 41AA02
Ex.Des: 61AA02
Ex.Des: 81AB00
FINISHING OPERATIONS
(See Finish Specification for details)
Designation
SURFACE APPEARANCE
A — As Is—Electro, Dipped Or Sprayed (Normal or Original) — Normal or original surface. No operations performed to improve the surface appearance.
B — Flat — A dull surface without luster or specular reflection, such as grit blasted surfaces.
C — Mat — A surface which is dull or slightly lustrous but without specular reflection, obtained by brushing, chemical etching, etc.
D — Satin — A surface with a moderate luster or sheen and a light degree of specular reflection.
E — Grained Mat — A mat surface distinctly scored with numerous parallel fine lines.
F — Grained Satin — A satin surface distinctly scored with numerous parallel fine lines.
G — Bright — A glossy surface having a polished or burnished appearance and a fair degree of specular reflection. This includes bright dipping, electro polishing.
H — Mirror Bright — A smooth highly reflective mirror-like surface.
K — As Deposited Chemically (Normal or Original) — Normal or Original surface. No operations performed to improve the surface appearance.

**This section from a page of the Materials Standard Book shows the numbering system for inorganic finishes recently developed at Westinghouse. Type of coating is identified by standard numbers, surface appearance by letter designations, and coating thickness by thousandths of an inch.**

insure that no unnecessary sizes or grades of material are ordered for stock, any materials not listed in the Standards Book must be approved for purchase by the Standards group.

During the recent war this rule was not followed by some of our rapidly expanding divisions, with the result that large quantities of unnecessary materials found their way into the storerooms. After the war our headquarters standards engineers assisted these divisions in eliminating duplicate and surplus materials with a large economy of operations.

In general, the most cordial relations exist between Purchasing and Standards.

**Engineering.** The Materials and Design Standards Books are the designer's bible. When he needs a material or part, the designer consults the book to see if it is in stock. If it is a somewhat special part, he consults the Standard Tabulated Drawings and if it is shown there, he can refer to it by style number and the draftsman does not need to show details on his drawing. This means large savings in drafting time.

If no standard material can be found, the standards engineer can be very helpful in suggesting a suitable material and will make it available for the job. In times of scarcity the standards engineer is well informed concerning substitutes and is invaluable in suggesting and authorizing their use.

Processes and Finishes are an important activity of the standards engineer. He makes available complete sets of specifications which the engineer can consult in order to decide what process or finish is most suitable for his application. For instance, some years ago a rather complete process specification was prepared covering various types of soldering. This was particularly useful during the war when tin was scarce.

Finish Charts and Standards Sheets cover metallic and organic finishes which are approved for use on Westinghouse apparatus. The four standard gray colors recently approved by the American Standards Association and the National Electrical Manufacturers Association are rapidly being adopted for Westinghouse equipment by our standards procedures. Not long ago a new system for designating metallic finishes was developed by the standards engineers and is being rapidly introduced. Anyone familiar with the system knows from the designation the material of the final coat and the total thickness of plating.

What degree of roughness can be tolerated on a machined part and how is this information put on the drawing? Sheets in the design standards book based on American Standards are available to all designers and draftsmen giving this data.

Standard costs are given in the Materials Standard Book for all approved materials. This is of great assistance to the designer in estimating the cost of a new design or of a repeat order on an old design. It also assists him in choosing the least expensive material which will do the job.

Design data on plastics and porcelain products are found to be invaluable to the designers. Much of this information until recently was carried in the heads of a few specialists.

Many pages of anti-friction bearing data are available showing the corresponding bearings of different manufacture, thus avoiding the necessity of consulting many catalogs. The tables of weights of standard sizes and grades of material assist greatly in calculating the weight of a newly designed piece of apparatus.

**Manufacturing and Quality Control.** The shop knows that since the designer in general specifies only standard materials, it will be possible to draw these materials from the storeroom without delay.

If tolerances are not given on the drawing, the shop man has a sheet of standard tolerances for different shapes and dimensions which he must follow. This saves a lot of time for him and for the designer.

The details of all important proc-

esses are given in specifications. These are a guide for the foreman and safety engineer as well as the workman. If a product proves defective due to not following the process specification, it is usually easy to place the blame and correct the fault. These specifications are mandatory.

If a certain maximum allowable roughness or waviness is specified on a drawing, the shop can, in general, use any kind of machining process which is most economical, but the final finish is capable of being measured and the shop must meet the specified values.

By supplying the shop with standard color chips, it is possible to insure a reasonable color match between pieces of apparatus manufactured in different plants and perhaps from paints furnished by different suppliers. The Munsell designation is often given on manufacturing information.

If a dispute arises between the engineer, the manufacturing department, or the quality control department, the existence of adequate standards, including values and methods of measurement, is of great assistance in settling such difficulties. If the quality of a product is a question of personal opinion, there is no end to the discussions which may arise. However, if the property under discussion is specified and subject to measurement, much time and friction can be saved. So Westinghouse process and finish specifications give detailed procedures and quantitative requirements.

**Materials Engineering.** Materials engineering consists primarily of a group of laboratories at the East Pittsburgh plant staffed with specialists in various fields of materials and process engineering. The major laboratories are as follows:

Physical Testing
Magnetic Testing
Chemical
Metallurgical
Metallographic
Spectroscopic
Plating
Paint and Finishes

These laboratories are partly development and partly control for incoming materials and shop processes. Many of the specifications processed and distributed by Standards Engineering are the product of the Materials Engineers as a result of their investigations or detailed knowledge. Their services are available to all Divisions of the Corporation.

**Research Laboratories.** The Research Laboratories frequently develop new devices, materials or processes and when these are released for manufacture or shop use, the research engineers assist in the development of suitable specifications for shop guidance. These are processed and distributed by Standards Engineering just as are other similar documents. The research specialists are frequently called on to assist in the preparation of specifications for other than their own products just as materials engineering is consulted.

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Materials and process standardization at the Westinghouse Corporation was started officially in 1903 by C. E. Skinner, who later (from 1925 through 1927) served as chairman of the American Engineering Standards Committee (now the American Standards Association).

For additional information about the present standardization operations of the Corporation, it is suggested that those interested refer to the Spring issue of *Standards World*, which will be off the press during March. This issue includes an article on "Standardization Practices of the Westinghouse Electric Corporation," by Mr Spooner.

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**Industrial Hygiene Department.** The industrial hygiene group is a part of the Medical Department. Its primary function is to investigate industrial hazards such as air pollution, radioactive dangers, handling of dangerous chemicals and the like. One of their products is a set of Safe Practice Data Sheets which are printed and distributed by the Standards Section. These are referred to extensively in process and finish specifications simply by number which eliminates lengthy precautionary clauses in such documents. Where new hazardous processes are involved, Industrial Hygiene is consulted when necessary with reference to the safety features of the process specifications.

**National Standards.** In the preparation of Westinghouse standards books national standards such as those issued by the ASA and ASTM are followed as far as possible. For instance, American Standard graphical and letter symbols and abbreviations approved by ASA are included almost 100 percent so far as they are applicable to Westinghouse products. The new screw thread standards will be adopted as soon as feasible with very few exceptions. Some Federal Standards, particularly in the drafting field, are included.

In the specifications for materials and test procedures ASTM standards are extensively referred to by number with consequent reduction in the length of these specifications. Metal products are frequently mentioned by SAE or AISI numbers but, in general, Westinghouse Purchasing Department Specifications or Material Numbers are assigned for internal use.

All American Standards are kept on file by the Standards Section and copies are supplied without charge to any department requiring them. Many other National, Association and Government Standards are kept on file for ready reference. The Manager of Association Activities also has on file many standards not available in the Standards Section.

The drafting manual conforms as far as feasible to American Standards. Formerly Westinghouse drawings were 9 x 12 in. and multiples. Very recently the 8½ x 11 in. and multiple sizes have been adopted. This was one of the major changes in the practices recommended in the new Westinghouse drafting manual just issued. These sizes had already been adopted over a year ago for Proposal Drawings.

### Authority

No materials or standard parts are ordered by the Purchasing Department which are not listed by Purchasing Department Specification, Material Number, or by Style Number unless approved by the Materials or Standards Engineer who is given the authority for such approvals.

When a process or finish is covered by a specification, the shop is not permitted to make departures without engineering authority. If it is found desirable to make changes, the specifications are altered to agree with the proposed new practice as soon as possible after the new procedures have been shown to be an improvement.

Engineering and drafting practices covered by the manuals are to be followed by the operating divisions unless approvals for departures have been obtained from Headquarters. Of course, this applies only to major practices.

### Other Westinghouse Standardizing Agencies

The standardization of office methods is primarily a function of the Accounting Department, although the approval and ordering of office equipment is a Purchasing Department function. A large accounting manual is maintained by headquarters to guide the various operating divisions and insure uniform practices.

The Headquarters Manufacturing Department has the responsibility for

a Works Standards Book which covers standard tools, supplies and machine tool practices. This group also maintains a well equipped Gage Laboratory to which all shop secondary measuring standards are brought for periodic check.

The manufacturing department of the Switchgear Division maintains a meter room for the routine repair and checking of electrical measuring instruments. It is, of course, equipped with suitable electrical standards.

### Summary

In a large organization such as Westinghouse with many widely separated operating divisions, a central standardizing group is essential, particularly for materials and process control. The Standards Section of Headquarters Engineering is given the authority to issue and enforce suitable specifications and data sheets covering materials and procedures for corporation wide use and to maintain satisfactory coordination between the Purchasing, Engineering and Manufacturing Departments with respect to such matters.

# Wartime Test Schedule Becomes Peacetime Practice

**Survey shows that American Standard test schedule is widely used by light and power companies; longer periods between tests justified by experience**

THE restrictions imposed by war conditions made it desirable to revise paragraph 827 of the Code for Electricity Meters so as to extend the test periods for watthour meters as a recommended war relief measure and as a guide to those concerned.

This revision was made effective November 5, 1942 and was generally adopted by Light and Power Companies not under the jurisdiction of a regulatory body who prescribed test schedules for watthour meters. Regulatory bodies prescribing test schedules either adopted the Code recommendations or provided equivalent relief. This made possible the collection of extensive data on watthour meter performance over longer test periods, than heretofore, and through the Association of Edison Illuminating Companies and the Edison Electric Institute these data were collected on a comparative basis. The results were gratifying in that they proved beyond a doubt that there was practically no change in the sustained accuracy of the watthour meters for the longer periods. This result initiated a general request to have the so-called war relief schedule in the Code continued as a recommended practice. The matter was submitted through the proper channels to the ASA Sectional Committee on the Code for Electricity Meters, C12, and was made effective August 1, 1947.

To determine the effect of this change a survey of member companies of the AEIC and EEI was made during September of this year. The results are shown in the analysis given below. A total of 51 companies reported, as follows:

| | |
|---|---|
| *Companies Using "Code" Test Schedules or Equivalent*— Total | 33 |
| Operating under the jurisdiction of a regulatory body | 19 |
| Not operating under the jurisdiction of a regulatory body | 9 |
| Operating under the jurisdiction of a regulatory body (which has no prescribed test schedules) | 5 |
| *Companies Not now Using Code Test Schedules But Which Anticipate Changes That Will Adopt the "Code" Test Schedules or Equivalent*— Total | 9 |
| Operating under the jurisdiction of a regulatory body | 8 |
| Not operating under the jurisdiction of a regulatory body | 1 |
| *Companies Not Using "Code" Test Schedules—No Changes Anticipated* Total | 9 |
| Operating under a regulatory body | 5 |
| Not operating under a regulatory body | 4 |

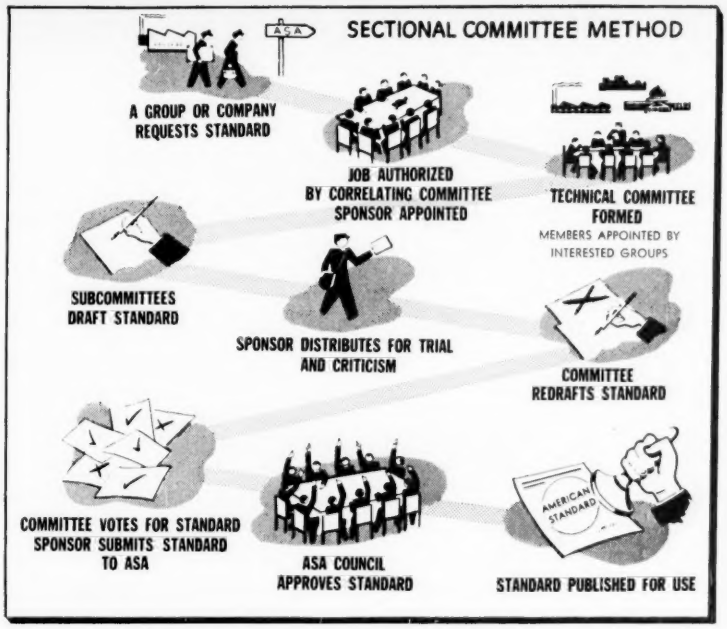
**The recommended periodic test schedule made effective August 1, 1947 and issued in the form of a sheet to be inserted in the 1941 Code for Electricity Meters**

**827. Schedule.** The sustained accuracy of meters between tests depends on many factors, primarily those of maintenance in service. A suggested schedule is presented below for periodic tests of meters maintained in accordance with the provisions of this Code:

SCHEDULE FOR PERIODIC TESTING OF WATTHOUR METERS

| | |
|---|---|
| Alternating-Current Meters | |
| Up to and including 12 kva | at least once in 96 months |
| Over 12 kva up to and including 100 kva | at least once in 24 months |
| Over 100 kva | at least once in 12 months |
| Direct-Current Meters | |
| Up to and including 6 kw | at least once in 42 months |
| Over 6 kw up to and including 100 kw | at least once in 18 months |
| Over 100 kw | at least once in 12 months |

NOTE: The kva rating of an alternating-current, single-element meter or the kw rating of a direct-current meter is the product of the rated voltage and the rated current. In the case of a polyphase or a multi-element meter the rating is the sum of such products for each element. The rating of a 2-element meter when of the split-coil type or when associated with 3 current transformers and used to measure energy in a 3-phase, 4-wire Y circuit is 3 times the rating of one element. When a meter is connected to instrument transformers or shunts, the nominal rating of the transformers or shunts shall be used in the determination of the kva rating of the meter.


SECTIONAL COMMITTEE METHOD
A GROUP OR COMPANY REQUESTS STANDARD
JOB AUTHORIZED BY CORRELATING COMMITTEE SPONSOR APPOINTED
TECHNICAL COMMITTEE FORMED
MEMBERS APPOINTED BY INTERESTED GROUPS
SUBCOMMITTEES DRAFT STANDARD
SPONSOR DISTRIBUTES FOR TRIAL AND CRITICISM
COMMITTEE REDRAFTS STANDARD
COMMITTEE VOTES FOR STANDARD SPONSOR SUBMITS STANDARD TO ASA
ASA COUNCIL APPROVES STANDARD
AMERICAN STANDARD
STANDARD PUBLISHED FOR USE

One method of developing an American Standard—showing the role of sponsors

# *Sponsors—*

# Vital Agents in Standardization Procedure

**The driving power of sponsorship sets the pace for formulation and approval of standards with which the sponsor is concerned**

***By T. E. Veltfort***

*Chairman, Committee on Procedure*

OF great importance in the development of a large majority of American Standards is the concept of "sponsorship." The term "sponsor" is applied to an informed, responsible organization, vitally interested in a standards undertaking, which has been designated by the American Standards Association to energize the development of the standard and guide it on its way toward approval as an American Standard. It depends largely on the alertness and driving power of the sponsor whether an American Standard emerges with dispatch or whether the job limps along haltingly for years—with an American Standard never appearing. A few illustrations of this latter condition led to the commissioning of the ASA Committee on Procedure to study the problem, including the duties, obligations, and privileges of sponsors.

There are three types of sponsors, each of which functions quite differently in accordance with the particular method of work under which a project is being developed—namely, Administrative Sponsor, Proprietary Sponsor, and Endorsing Sponsor. In order to set forth clearly the functions and duties of each of these three types of sponsors, it will be well to review the regular procedures through which American Standards are developed.

First of all as to fundamentals:

"An American Standard implies a consensus of those substantially concerned with its scope and provisions. The consensus principle extends to the initiation of work under the procedure of the Association, to the method of work to be followed, and to the final approval of the standard."

Standards may come before the

ASA for approval by any method that provides compliance with this consensus principle.

For flexibility, four formal methods of accomplishing this are provided:

1. *Sectional Committee Method.* Most American Standards are developed through sectional committees. These are made up primarily of representatives appointed by the various interested groups. The great majority of sectional committees work under the leadership of one or more cooperating bodies, which are termed Administrative Sponsors.

Some few sectional committees function autonomously. These are organized by the Association through the Correlating Committees rather than by a sponsor. In these cases it is required that one or more responsible bodies recommend the initiation of the project and endorse the proposed standard. Such bodies are termed Endorsing Sponsors, and the committees are termed Autonomous Sectional Committees.

2. *Existing Standards Method.* Any existing standard may be approved provided it may be shown that the standard is supported by the necessary consensus of all parties at interest.

3. *General Acceptance Method.* American Standards may be developed through conferences of the groups concerned, supplemented by written acceptances.

4. *Proprietary Sponsorship Method.* Under this method revision of American Standards may be carried out by the Proprietary Sponsor within its own organization.

## Sponsorship System An Important Device

In its study of the problem the Committee on Procedure has found that the expedient of sponsorship is supported by a well-established historical background. When the Association was first established, there were hundreds of organizations issuing standards. The objective was to set up a national clearing house which would operate in such a way as not to break down this valuable work, but would strengthen it and utilize it in the integration of standards on a national level. To accomplish this, the main reliance was placed on the use of such organizations in the role of sponsors. By this device an organization occupying an outstanding position in the field of the standard is placed in the position of active leadership in the development of the standard by the sectional committee. This is the only country in which sponsorships are used.

In special circumstances, two or more organizations may serve as joint sponsors.

At first very little was done to define the responsibilities of sponsors. They were given broad powers, including veto power over the standards produced by sectional committees. From time to time dissatisfaction arose over the way sponsorship was working. Progress was too slow. On each of four such occasions special committees were appointed to find ways and means of expediting matters, and extensive studies were made. On each of these occasions an educational campaign was carried on and specific improvements in the procedure were made.

***Mr Veltfort*** *is manager of the Copper and Brass Research Association, New York. He is a member of the Standards Council and Board of Review of the American Standards Association, Incorporated.*

## Sponsors Have Specific Responsibilities

Because, initially, emphasis was placed on the powers and prerogatives of sponsors, with little said as to their responsibilities, organizations were led to seek sponsorship solely for its prestige value. As a result of the work of the first of the expediting committees which studied this particular problem, specific responsibilities were laid down for sponsors. This at least helped to reduce the competition for sponsorships, as it was made clear that more was expected of the sponsor than the mere lending of its name.

When the American Engineering Standards Committee was reorganized as the American Standards Association in 1928, the arbitrary veto power which sponsors had had over standards was abolished. Provision was made that "if a sponsor does not recommend the approval of the proposed standard, it shall nevertheless report it to the Association with a statement giving its reason for disapproval."

In 1931, authority was given to the Electrical Standards Committee to act as a sponsor. A few years ago the Planning Committee of the Standards Council rendered a special report, the approval of which extended this idea by making it possible for all correlating committees (which supervise projects for the Association) to serve as sponsors. This principle is now incorporated in the By-Laws. To expedite the work further, the Planning Committee's recommendation that the ASA staff should render more help to sponsors as well as to sectional committees was also adopted.

What, then, are the functions and responsibilities of sponsors? Their function insofar as basic principles are concerned, is indicated in the Constitution and By-Laws; their duties are set forth specifically and in considerable detail in the Procedure.

An Administrative Sponsor is responsible for organizing the sectional committee in cooperation with ASA or arranging with ASA to do so. In organizing the committee, the sponsor must see that the personnel conforms in its composition with the requirements of the Procedure—that is, the membership must be authoritative, representative, and well balanced—and that it is submitted for approval by the ASA.

The Administrative Sponsor must also provide administrative support and direction to the Sectional Committee developing the standard; provide the necessary facilities including secretarial services; furnish the Association with copies of calls and minutes of all meetings of the sectional committee; and supply copies of the drafts of standards as they are developed, as well as copies of the ballot forms sent to the sectional committee with respect to the approval of the proposed standard. To keep the Association informed of the progress of the work, such a sponsor is also required to provide the Association with semi-annual reports.

### Reporting a Proposed Standard

The sponsor is required to report to the Association the proposed standard with the necessary exhibits including the results of the sectional committee balloting, its own recommendations in the matter, and any other pertinent material.

It is further provided that if the sponsor does not recommend the approval of the proposed standard, it shall nevertheless report it to the Association giving its reasons for disapproval. In such an event one or more of the other cooperating bodies represented on the sectional committee may offer the proposed standard for approval on their own behalf and, in this case, the matter will be investigated and decided upon grounds within the jurisdiction of the Association.

After the sectional committee has rendered its report and the standard has been approved by the Association the sponsor may, at its discretion, continue the committee or discharge it. The sponsor may at any time within its discretion initiate the revision of a standard. It is obligated upon request of the Correlat-

ing Committee to initiate a review looking toward reaffirmation or revision of the standard.

The sponsor may publish the approved standard or arrange with ASA for its publication, but ASA reserves the right to publish in uniform style any or all standards.

### Time Element Important In Submittal of Standard

Most important is the provision that in all cases the sponsor should submit the proposed standard to the Association for approval together with its own recommendation, at the earliest possible date. The Association is ready to assist the sponsor in securing a further degree of acceptance of the proposed standard and the sponsor may gain an extension of time for this purpose.

The question has also arisen whether the provision that the sponsor submit the standard together with its recommendations with respect to the standard "at the earliest possible date," is sufficiently specific. There is thus the possibility that a sponsor, wishing to delay or withhold the submission of a standard, might indefinitely expand on what it conceives to be "the earliest possible date".

On first thought the imposition of a time limit for submission of the standard would seem to be the logical remedy for this, but further consideration indicates that a time limit would be difficult to specify and to enforce. A more practicable remedy appeared to the Committee on Procedure to be the addition of a provision that if, in the opinion of one or more of the cooperating bodies represented on the sectional committee, the sponsor has unduly delayed submitting a standard to the Association, they may offer the proposed standard for approval on their own behalf and the matter may then be investigated and decided upon grounds within the jurisdiction of the Association. In other words, one or more cooperating bodies which believe it essential to obtain the approval of a standard, which the sponsor has withheld for an unduly long time, may appeal in a manner similar to that provided where the sponsor specifically recommends that the standard be not approved. The Committee on Procedure has recommended to the Standards Council the addition of such a clause to the Procedure.

There is no provision in the Procedure obligating the sponsor to promote the use of the standard but experience has demonstrated the importance of sponsors using their best efforts to promote a knowledge and use of those American Standards which have been developed under their special responsibility.

As indicated before, a Proprietary Sponsor can function only with respect to the revision of a standard and, when designated for that purpose, it develops the revision of the standard within its own organization, submitting the revision to the Association for approval. In order to obtain approval of the revision of the standard, the sponsor must submit information with respect to the following:

(a) Evidence of the acceptance of the revision of the standard by those substantially concerned with its scope and provisions.

(b) Method by which the revision was formulated.

(c) Observance by the sponsor of the requirements for representation and assent in accordance with the basic principles of the ASA.

As in the case of the Administrative Sponsor, the Proprietary Sponsor is required to keep the ASA informed of the progress of the work by means of semi-annual reports. Similarly, provisions are also made regarding the publication of the standards by the sponsor or the Association.

Inasmuch as Endorsing Sponsors perform no other functions except the relatively simple ones of recommending the project, or endorsing a standard for approval, or both, no further provision is made for their responsibilities. (In practice, the formal term "Endorsing Sponsor" is seldom used in connection with a cooperating body which recommends a project.)

As previously indicated, autonomous sectional committees are organized by the Association instead of by the sponsor; and the standard developed by such a committee together with the pertinent material is submitted direct to the Association for approval.

The Procedure makes sponsorship assignments subject at any time to review or changes by the Association.

### Eternal Vigilance Necessary

Implied in all of the above is the definite responsibility of all sponsors for leadership. Eternal vigilance on the part of the sponsor is essential if inordinate delays are to be avoided and the work of developing and establishing the standard is to proceed effectively. The increasing need for standards inherent in the rapidly growing complexity of our economy places a special duty on sponsors in this regard. As might well be expected, time and experience have shown that those sponsors which have intelligently sensed this responsibility and have conscientiously carried out their duties with reasonable dispatch, are the ones which have gained credit and prestige for their constructive work, both for themselves as organizations and for their members.

It is incumbent upon all organizations before they assume sponsorship for standards to acquaint themselves with the administrative and financial responsibilities involved and to weigh carefully their ability and the willingness of their membership to carry them out. Growth of mere nominal sponsorship (that is, the type of sponsorship which seeks to assume credit for the standard but shirks the duties and responsibilities involved) must inevitably create pressure away from sponsorships toward existing alternative methods; toward new and more democratic methods; or even toward the use of other channels entirely. On the other hand, if all sponsorships can be raised to the level of effectiveness which experience has shown can be reached by truly responsible sponsors, great progress indeed can be made in standardization with substantial benefit to all American industry.

## Gustave L. Gerard

Gustave L. Gerard, president of the Institut Belge de Normalisation and vice-president of the International Organization for Standardization, died January 11.

Mr Gerard was the first secretary of Belgium's standards body, founded in 1919 as the Association Belge de Standardisation. He was at the time of his appointment vice-director of the General Industrial Committee of Belgium. In 1946, the association was dissolved and reorganized under government sponsorship as the Institut Belge de Normalisation. He has been president since that time.

Mr Gerard was one of the most widely known men in the standardization movement. He always had a very keen interest in international cooperation and frequently took part in international meetings and organizations. He was a member of the first Conference of the secretaries of the national standardizing bodies which met in London in 1921 and of the larger Conference which met in Zurich in 1923. He took an active and influential part in the London Conference in 1946 which resulted in the organization of the International Organization for Standardization (ISO), of which he was first vice-president at the time of his death.

# API Work Is Basis for Inter-Industry Understanding

**Satisfactory standards in the petroleum industry have assisted both producer and manufacturer in accurate specification of equipment**

**By J. O. Hills**

*General Petroleum Corporation*

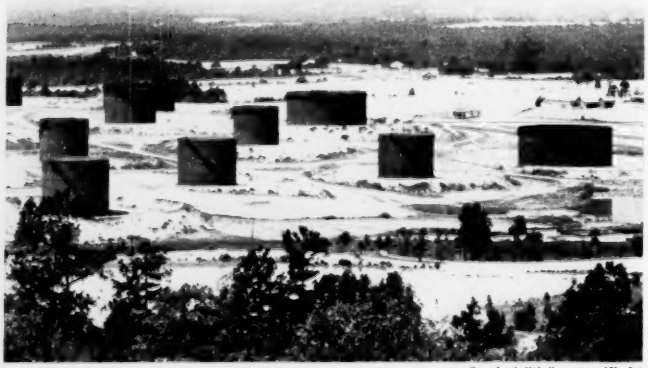
STANDARDIZATION work of the American Petroleum Institute is a major activity of its Division of Production, which in turn is one of the four main divisions of the Institute—the others being Transportation, Refining, and Marketing. Under a Central Committee on Standardization are eleven main committees having jurisdiction over belting, boilers, cable tools, rigs and derricks, pipe, valves and fittings, rotary drilling equipment, wire rope, pumping equipment, tanks, and gaging practice. Each of these main committees consists of representative operators from many companies from all over the United States. These main committees are divided into district committees, the members of the main committee from each district constituting the district committees. In turn, main committees have manufacturers' subcommittees, engineers' (that is, users') subcommittees, and subcommittees on various special items and problems within their general scope. Membership on these committees totals about 750. Local meetings are held at the discretion of the local chairman and there is a main meeting of all active committees held once a year at the annual Chicago API Convention. The aim is to have as complete representation as possible of all interested users and manufacturers from all areas.

Most committee meetings are open to visitors, and visitors are free to participate in the discussion and are often invited to cast an unofficial vote. Standards are generally formulated in such open meetings but are subject to ratification by the regularly appointed members of the committee by letter ballot. Suggestions for the adoption of new standards or the revision of existing standards are welcome from all regardless of whether or not they are members of the committee.

The standardization work of other organizations is utilized freely and given full credit wherever such use is approved by the other organizations and found suitable to oil industry needs. The API committees have no desire to compete with other organizations which are suitably covering the field, but on the other hand cooperate in whatever manner seems most suitable to each individual case. Examples of such organizations whose standards are used by API are the American Society for Testing Materials (derrick materials), the National Bureau of Standards (Simplified Practice for Wire Rope), and the American Standards Association (American Standards for flanged valves and fittings).

The first standard of the API Division of Production was adopted in 1924, and today there are 29 standards, sponsored by the eleven main committees mentioned previously. The major specifications average about 20 years old but have run through a total of 183 additions, an average of about six each. The very important pipe specification is in its fourteenth edition with two subsequent supplements. Nine specifications have editions dated 1947, and thirteen others have 1947 supplements, leaving only seven specifications which are much more than a year old.

Use of API specifications is entirely optional. The Institute and its committees say, "Here is the best specification we can devise,—use it if you like it." The great quantity of equipment made and bought under



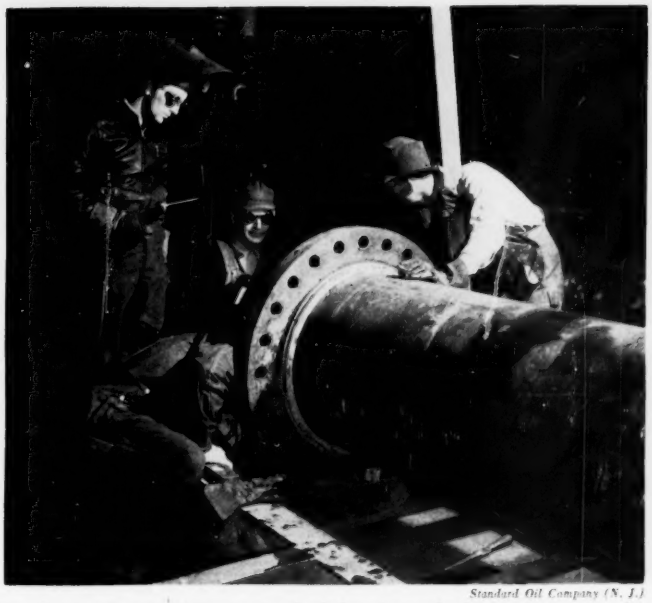
*Standard Oil Company (N. J.)*

**Standards for tanks are the work of a main committee of the API Production Division. Above, some of the tanks of the Corsini Plantation Pipe Line Co.**

The article, "Petroleum Industry Finds Key to Better Customer Relations," published in the November 1948 issue of INDUSTRIAL STANDARDIZATION, described the preparation of standard specifications and tests for petroleum products and lubricants—work that is of special help to the user of petroleum products in his selection of grades and types best suited to his purpose. That work was done by committees of the American Society for Testing Materials and by the ASA Sectional Committee on Petroleum Products and Lubricants.

Now, rounding out this picture, STANDARDIZATION is pleased to present an article describing the standardization work done by the American Petroleum Institute to help producers of petroleum products in defining the kind of equipment they need and to help producers of that equipment in meeting requirements.

This paper was presented by J. O. Hills, of the General Petroleum Corporation at a recent meeting of the American Society of Tool Engineers.



*Standard Oil Company (N. J.)*

**Interchange of material due to standards for pipe and other equipment is valuable in peace as in war. Here, a flange is being seated around a 20-in. pipe.**

API specifications is evidence of their value, while the substantial use of non-API material proves that there is no compulsion. Individual initiative is continually experimenting with specifications which it hopes will prove better, and which may later be adopted as standard.

The API monogram is registered in the United States Patent Office. Manufacturers may be authorized to use it without charge upon certifying that equipment so marked will conform to the pertinent specifications. The monogram must be considered a representation from the maker to the user that the material does conform. The Institute has no procedure or personnel for determining whether material marked with the monogram does actually comply. The purchaser must rely upon the integrity of the manufacturer or make such inspections and tests as he considers necessary and appropriate,—as he would in the case of other representations by the same manufacturer.

API standards are used throughout the world. As an example of this, of the 35 pipe licensees listed in the current issue of the pipe standards, 14 are companies outside the United States.

API standards aim to accomplish the purposes of:

Interchangeability
Economy
Utility
Understanding

We are all familiar with the advantanges of interchangeability due to standardization of such items as garden hose connections and electric light bulbs. The API standards promote similar desirable interchangeability of such items as pipe, oil well pumps, and many others.

### Concentrating Manufacture Upon Certain Units Brings Economy

Economy is another purpose of standardization. Modern efficient production methods are possible only where large numbers of identical units can be made consecutively. Practically all API specifications tend to effect economy through simplification because certain sizes or qualities or performance ratings are specified and tend to concentrate manufacture upon units thus specified.

To increase production and reduce costs during the last War, the War Production Board insisted upon simplification through standardization by many industries of many important products for military and civilian use. The oil industry was particularly fortunate in having its own standards which were so satisfactory that many of them were endorsed without alteration by the War Production Board. The oil industry already had the economy through simplification that was demanded of all industries. Industry standards thus obviated government standards which would have been prepared hastily by a less representative group and thus would have been less satisfactory. This obviated any radical change of practice by the oil industry.

API standards are also aimed at providing the maximum of utility in products made for the oil industry. Requirements are studied and essential dimensions, materials, performances, strengths, and features are specified.

An additional important effect of API standards is that of providing a standard nomenclature which facilitates understanding among the people of the oil industry and related industries. The industry has so many unique practices and items of equipment that it has developed a language of its own. Unfortunately and more accurately it developed many languages of its own, and people of different companies, and from different areas, had great difficulty in understanding each other when they used their local slang terms. This has been largely overcome by API standards which provide recognized names for most items of equipment and for many practices.

### Standards Allow for Individual Initiative

In order to accomplish the purposes described above, API specifica-

*Standard Oil Company (N. J.)*

**Physical and chemical properties and performance are specified when possible, but provision must be made for possible failures. A "tattletale" hole is here being bored to allow mud to leak out if a defect develops in a mud pump.**

tions may cover any or all of the following features:

Dimensions
Method of manufacture
Physical and chemical properties of material
Performance ratings of finished product
Gaging practice
Nomenclature

Actually they cover only such elements of a product as it has seemed desirable to cover. Much room is left for the initiative and judgment of the manufacturer, and for the choice of the user, even within their scope.

Nearly all API standards cover dimensions. Dimensional specifications permit interchange of equipment, create economy through simplification, and tend to assure utility. Standards on pipe of all kinds, oil well pumps, and sucker rods (used for pumping wells) are examples which permit the interchange of material made by any manufacturer with that made by any other manufacturer. The ability to interchange material from different sources was of tremendous value during the war whenever odd lots of material could be combined to make a usable total, and has been of similar value since the war. API Casing Standards are guiding manufacturers to concentrate their production upon a carefully selected list of sizes, weights, and grades of casing which cover practically all ordinary needs and which, being made in relatively large quantity, increase the effective productive capacity of mills, and effect savings in cost of manufacture.

Method of manufacture is sometimes specified, where it is felt that other types of specifications do not assure a good product. Examples are boilers, pipe, wire rope, and tanks.

Physical and chemical properties of material are specified wherever it has seemed desirable to do so. Chemical specifications are an indirect means of controlling physical properties, and the trend is to specify physical properties more carefully and eliminate chemical specifications, but this is not always safe.

Performance ratings of finished products are specified in a number of cases. In some cases these ratings are only nominal. In some cases a standard method of determining the rating by calculation is stipulated, and in other cases a test procedure for establishing the rating is prescribed. For example, the API performance rating can be established through calculation for boilers, derricks, speed reducers, and some items of hoisting equipment. Methods of rating by test are prescribed for internal combustion engines, some items of hoisting equipment, bursting strength of some pipe items, and valves of various kinds. There is a prevailing thought in API standardization committees that performance specifications are the type ultimately desired, and that such specifications will obviate certain other types. As an example, if the bursting, tensile, and collapse properties of finished pipe could be satisfactorily specified, it would be possible to eliminate all specifications as to method of manufacture, physical properties, and chemical properties. Some progress is being made in this direction.

Gaging practice must be specified in order to make dimensional specifications effective in some cases. Dimensions such as the length of a joint of pipe can be measured satisfactorily without any method being specified, but the more exact dimensions which affect interchangeability, such as threading dimensions on pipe, must be measured by a carefully prescribed technique and with carefully specified instruments. A special committee correlates all gaging practice.

Nomenclature facilitates conversation and correspondence, not only between buyers and sellers, but between users of oil field equipment. The specification on oil well pumps is an outstanding example of the benefits of standard nomenclature. These pumps take such a variety of forms that it used to be almost impossible for one man to understand another man's description of the type of pump that he wanted or had in use. A rational system of describing a pump by type together with suitable abbreviations was devised and incorporated in the specification and quickly gained general use.

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"Petroleum industry standards are valuable because they are progressive. They must be kept progressive. That means that many people from many companies must serve on committees and that many people who are not members of committees must contribute information and recommendations to the committees. It means that those who are offered appointments upon committees, if they are at all able, must consider such appointments a privilege and a duty to themselves and to their companies and to their industry.

"It is not enough that excellent standards be adopted through the cooperation of many individuals and companies. It is also necessary that an even larger number of people understand the specifications and give serious consideration to their use."

—H. N. Marsh, *General Petroleum Corporation, May 1948*

**From an address, "Progresss of API Standards", presented at the Spring Meeting of the Pacific Coast District, Division of Production, American Petroleum Institute.**

# Changes in Board of Directors Announced

**Safety, lumber, petroleum, and retail dry goods associations name new members of ASA Board**

Robert I. Catlin

Richard A. Colgan, Jr

Robert A. Seidel

John R. Suman

Four new members have been elected to the ASA Board of Directors, while three present directors have been re-elected for a three year term. The American Standards Association is pleased to welcome:

***Robert I. Catlin,*** vice-president, Aetna Casualty and Surety Company, representing the National Safety Council;

***Richard A. Colgan, Jr.*** executive vice-president, National Lumber Manufacturers Association, representing the National Lumber Manufacturers Association;

***Robert A. Seidel,*** vice-president and comptroller, W. T. Grant Company, representing the National Retail Dry Goods Association; and

***John R. Suman,*** vice-president and director, Standard Oil Company (New Jersey), representing the American Petroleum Institute.

Mr Catlin is vice-president of both Aetna Life Insurance Company and Aetna Casualty and Surety Company of Hartford, Connecticut, but the major part of his work is concerned with the casualty and surety aspects of insurance.

He began his executive career as assistant superintendent of the liability department of the Fidelity and Deposit Company in Baltimore. In 1918, he became assistant superintendent of the auto department of Aetna Affiliated Companies. This was soon followed by elevations to superintendent, assistant secretary, secretary, and, finally, assistant vice-president. In 1938, he was elected vice-president.

In addition to numerous community activities, Mr Catlin is also chairman of the State of Connecticut Highway Safety Commission.

Forestry has been Mr Colgan's interest for more than 30 years. From 1913, when he graduated from Michigan State College, until 1920, when he joined the Diamond Match Company, he worked successively with the U. S. Forest Service, the California State Division of Forestry, the U. S. Forest Products Laboratory, and several private lumber companies.

Most of his quarter century with the Diamond Match Company was spent in California, his last assignment being that of production manager of timber and lumber operations. He was responsible for the establishing of the North Butte Protective Unit, a cooperative undertaking sponsored and supported by the U. S. Forest Service, the California State Division of Forestry, the California Forest Protective Association, the Board of Supervisors of Butte County, California, and the Diamond Match Company. This unit introduced many new ideas and methods of fire prevention and suppression for the West Slope Sierra timber types.

In 1945, Mr Colgan was a vice-president and director of the Western Pine Association and a member of that organization's Forest Practice Committee for California. From 1935 to 1940 he was a member of the Conservation Committee of the National Lumber Manufacturers Association. He was elected executive vice-president of the NLMA in 1945.

Mr Seidel joined Montgomery Ward and Company in 1927, after approximately nine years in the Naval Service. He held the positions of store manager, district manager, assistant retail operating manager, retail merchandise manager, and merchandise manager of home furnishings. He joined the W. T. Grant Company in 1940 as comptroller and was elected vice-president in 1944. Mr Seidel should be well known to many members of the ASA for his very active role as chairman of the Consumer Goods Committee, top technical and advisory committee in the field of consumer standards.

The petroleum industry has had the services of Mr Suman for more than 30 years—as engineer, geologist, and executive. He is credited with a major part in the development

that made Humble Oil and Refining Company of Houston, Texas, affiliate of Standard Oil Company (New Jersey).

Following his graduation from the University of Southern California in 1912, he was associated with the Rio Bravo Oil Company, the Roxanna Petroleum Corporation, the East Coast Oil Company of Mexico, and the Associated Oil Company of California. Mr Suman joined the Humble Company as a director in 1927, and was made vice-president in charge of production in 1933. He was elected vice-president and director of Standard Oil Company (New Jersey) in 1945 and became a regular member of Jersey's Executive Committee in 1946.

Author of many technical papers and recipient of the Anthony F. Lucas Medal for "distinguished achievement in improving the technique and practice of producing petroleum," he received the honorary degree of Doctor of Engineering from the South Dakota School of Mines in recognition of his contributions to the petroleum industry.

Those who were re-elected to serve another term on the Board are:

***Clarence L. Collens,*** chairman of the board, Reliance Electric and Engineering Company, representing the National Electrical Manufacturers Association;

***Roger E. Gay,*** president, Bristol Brass Corporation, representing Copper and Brass Research Association; and

***Carol Willis Moffett,*** member-at-large.

# Hotel Group Adds Its Support To National Standards Work

ALTHOUGH it is the newest Associate Member of the American Standards Association, the American Hotel Association has been an active participant in ASA project work for some time. Its representatives serve on sectional committees concerned with a variety of topics—from safety codes for elevators, dumbwaiters, and escalators to standards for sheets and sheeting.

More specifically, they attend meetings dealing with the Building Exits Code, A9; Safety Code for Elevators, Dumbwaiters, and Escalators, A17; Walkway Surfaces, A22; Plumbing and Plumbing Equipment, A40; Household Refrigerators and Home and Farm Freezers, B38; Sheets and Sheeting, L1; Bedding and Upholstery, L12; and Women's Industrial Clothing, L17.

In its own research work, the American Hotel Association sponsors a program to determine the quality and fair-pricing of products used in hotels. Exhaustive laboratory tests on such subjects as soaps and detergents, paints and varnishes, waxes, polishes, and carpet cleansers are conducted for AHA by York Research Corporation of Stamford, Connecticut.

Incorporated nearly 40 years ago as a nonprofit service organization, the American Hotel Association has a federated membership of some 6,000 leading hotels across this country and neighboring countries. More than 200 firms furnishing either goods or services to the industry also belong to the AHA through its Allied Membership Division.

The affairs of the Association are administered through a Board of Governors, comprising one representative from each state or regional association, and an elected Board of Directors, comprising 15 district members and six duly elected officers. The ultimate authority in all matters, however, is the membership itself.

General supervision of all activities of AHA and its departmentalized functions is handled by Charles A. Horrworth, executive vice-president. More than 40 persons are engaged as staff members at both the New York and Washington offices of the Association.

Augmenting the services of these staff members are nearly a score of specialists who serve as consultants to such departments as Public Relations, Employer-Employee Relations, Business Promotion, Service and Research, Governmental Affairs, Statistical, and Publicity.

The current primary objectives of the Association indicate the kind of activity in which the AHA engages:

"To constantly promote better operating standards and services for the benefit of the public;

To improve the quality and performance factors in all hotel methods, operating supplies, and equipment;

To improve employee efficiency and the relations between employer and employee;

To meet the challenges of changing travel trends;

To accelerate the two billion dollar rehabilitation and modernization program of the industry;

To inform members fully about all activities and changes in the economic, government, industrial, and Association picture;

To inform and educate the hotel operator with his responsibilities and opportunities in the field of public relation;

To present to the government the needs and objectives of the industry;

To promote unity and strength in the industry; and

To promote goodwill for hotels nationally and improve the prestige of the hotel operator in his community.

Joe H. Adams
President
American Hotel Association

Charles A. Horrworth
Executive Vice-President
American Hotel Association

# Norway Holds *Jubilee* Standards Meeting

**Representatives from Denmark, Sweden, and Finland meet with Norwegian standards association to discuss coordination on common problems.**

Fra vilkaarlighet og sloeseri til orden og oekonomi—in translation, "from confusion and waste to order and economy" was the slogan of the "Jubilee Week" held in Oslo, Norway, October 11-17, in celebration of the 25th anniversary of the organization of Norges Standardiserings-Forbund, Norway's national standards association.

The Jubilee not only featured some 13 important papers of special interest in the Norwegian standardization program but also brought together representatives from the staffs of the national standardizing bodies of Denmark, Finland, and Sweden, as well as industry and government representatives from these other Nordic countries. The tie which has brought these four countries into a close alliance since the war was recognized in a series of Inter-Nordic Standardization (INSTA-) meetings on special standardization problems on which it is considered important to have coordinated standards in Norway, Finland, Sweden, and Denmark. Some of the subjects discussed by the 15 INSTA committees which met in Oslo included hospital equipment and supplies, which brought in representatives of the Armed Services as well as civilian groups; pallets for fork trucks; paving stones and curbstones, (revising already existing Scandinavian standards); house building and construction in general; packages for frozen foods; specifications and methods of test for iron, steel, and nonferrous metals; printed forms (checks, letterheads, and office forms); and materials for making concrete. This latter, which is a revision of a 1927 standard, is of special importance at the present time because the sand required in the earlier document for use in standard tests can be obtained only from the Russian zone of Berlin. The use of a different type of sand and the changes this would necessitate in the standard requirements were considered at the meetings.

An INSTA meeting on testing textiles considered the recommendations made at the meeting of the ISO committee at Buxton, England, last June.

### Standards for Many Types of Glass Bottles Adopted

Tests for glassware for acids and other types of chemicals, and screw threads for glass containers, were also considered. A new INSTA screw thread for medicine bottles, vinegar bottles, and fruit juices has recently been adopted as a result of meetings, held since the war, among the four Nordic countries. One of the important developments has been adoption of standard penicillin bottles and bottles for hypodermic preparations. The American practice in regard to height, top dimensions, and volume content were accepted, but the new INSTA standard bottles are not quite the same shape as the American.

In addition to technical problems, the staff representatives from the four standards bodies discussed administration problems in general.

The Norwegian standards association was organized in 1923 and has operated continuously since that time under the direction of Mr Kaare Heiberg. Mr Heiberg was a young engineer only four years out of college when he was appointed to head the new standards body. He took over this position on January 2, 1924. As a background for his work, a fellowship was given him by a foundation in Norway interested in

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Among the guests who attended the Jubilee meeting of the Norwegian standards association were officers of the standards associations of the other three INSTA (Inter-Nordic Standardization) countries, as well as the General Secretary of the International Organization for Standardization, Mr Henry St Leger. Present from Denmark were Mr Dithmer, vice-president, and Mr Glahn, director, as well as two other members of the Board of Directors; from Finland, Mr Wegelius, president; Mr Willberg, director, and three other members of the Board of Directors; and from Sweden, Mr Soellfors, vice-president, Mr Lindgren, director, and a number of other members of the Board of Directors.

The opening session of the Jubilee was held in the festival hall of the University of Oslo and was attended by His Royal Highness, Crown Prince Olav. Mr G. Ring Amundsen, president of NSF, presided.

the new organization, making it possible for him to travel throughout Europe and study the methods followed by the older standards associations in France, Germany, Holland, England, and Switzerland.

### Standards Work Includes Agricultural Products and Fish

Unlike many of the other standardizing bodies, the work of the Norwegian association has from its early days included agricultural products and fish, as well as the engineering fields. Such standards as those for the wooden cases used in transportation of herring and other types of fish are enforced by law. Others, although not adopted legally, are generally followed by all groups. The standards for grading and for sampling and testing whale oil, for example, are used by the whaling companies as well as by chemists, soap manufacturers, and manufacturers of margarine (made with whale oil in Norway). Work on agricultural standards also includes definitions for the grades of apples, pears, cabbage, and other vegetables, as well as the crates and boxes for packaging. Quality products for such food stuffs cannot be sold in Norway without reference to the NSF standards. Even boxes and crates for transporting live poultry, pigs, and other farm animals are the subject of Norwegian Standards.

Work on building standards forms an important part of the NSF program. These standards outline what is considered to be good practice as agreed upon by the outstanding organizations concerned. They are not enforced legally as are building codes in general but in case a question arises as to the quality of workmanship or materials in a building the courts refer to the standards as the criteria of good practice. One variation from this general statement is the standard for steel construction which is considered to be of such importance to the general welfare that it is enforced by law.

### Special Attention Given To Unusual Weather Problems

The special problems that builders and home owners face because of Norwegian weather are given particular attention in the standards for construction of doors and windows. Although these correspond in general to Swedish standards, they also include types used to a large extent in Norway exclusively. New and unusual types of construction are recommended to keep doors and windows tight against the rain, wind, and cold, which are particularly bad in the bleak western and northern sections of the country. Represented on the committee that developed this standard were the technical and user groups, including the Society of Architects, Society of Cabinet Makers, the Technical High School, the Department of Reconstruction, Department of Supplies and Rationing, the Housewives Group, and the Municipality of Oslo. The standard was submitted to the producer groups and no objections were received. Although they have not yet done so, it is expected that the municipalities will insist that the standard be used in all new buildings under their jurisdiction. The housing shortage is acute in Norway and new buildings are being put up as fast as it is economically possible to do so. These standards therefore will have increasing importance as new construction is authorized.

Emphasis is being placed at the present time on an overall program of standardization for hospital equipment, a standard for cost accounting, and a proposal being urged by Mr Heiberg himself for an international system of screw threads.

### Hospital Program Covers Wide Range of Equipment

The hospital program is far reaching, covering the whole range of equipment used, from surgical instruments, knives and forks, beds, and all types of hospital glassware to the quality of textiles used in uniforms of the hospital staff, record forms, and temperature charts. Dimensions and styles of good containers are standardized for shape and dimensions to fit on the stoves and on the wagons that transport the food from the kitchens to the patient's bedside.

The new standard for cost accounting well illustrates some of the difficulties that beset a formerly occupied country in a postwar economy. Faced with shortages of manpower, equipment, and paper, the new standard is just coming off the press, having been in process at the printer's for two years.

Mr Heiberg takes a personal interest in the possibility of developing world agreement on a system of screw threads. He doubts the possibility that the new Uniform Thread System agreed upon by Canada, the United Kingdom, and the United States could ever become accepted as world-wide practice. As a result he is proposing an entirely new system to cover not only threads for ordinary bolts and nuts but also threads for mechanical engineering in general.

The practice of other countries is closely studied by the Norwegian standards association and where it seems important for standard practice to be coordinated with that of other countries, this is taken into consideration. A new INSTA draft standard on V-belts and V-belt pulleys, for example, is based partly on standards of the Rubber Manufacturers Association and the Society of Automotive Engineers of the United States, and partly on a corresponding British draft standard and on practice in the INSTA countries.

The Norges Standardiserings-Forbund is governed by a Board of Representatives whose members represent technical societies, associations, and government departments. These include such civilian organizations as the Federation of the Mechanical Industry, the Norwegian Association of Engineers, and the Agricultural Association as well as the Foremen's Society, the Handicraft Employers' Association, the Merchant's Association, the Housewives Association, the Federation of Industries, and the Norwegian Committee of the International Electrotechnical Commission are represented. On the government side the Army, Navy and Air Force, the Department of Reconstruction and Supply, the Departments of Industry and Commerce, Agriculture, and Communications, the University of Agriculture, the Technical High School, and the Shipping Control Board.

### Government and Industry Sponsor Association Jointly

The association is supported partly by the government and partly by industry. Handicapped at the present time by too small a staff to carry out satisfactorily the ambitious program outlined for future development, Mr Heiberg plans to eliminate all sections of the program which are not given sufficient financial support to be carried forward on a satisfactory basis and put his entire efforts into those projects which do have the full support of all groups. His plans for the next year call for seven divisions of the technical work in addition to the general administration and international activities, and publication and sale of standards. Divisions on mechanical engineering, civil engineering, housebuilding, hospitals, agriculture, the motor industry, and a miscellaneous group of standards are planned.

# Standards Received From Other Countries

MEMBERS of the American Standards Association may borrow copies of any of the following standards recently received from other countries by contacting the ASA Library. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received.

For the convenience of our readers, the standards are listed under their general UDC classifications.

## 621.6 Devices for Conveyance and Storage of Gases and Liquids in General

*Germany*

Steel Non-Return Valves, Valve Blanks for Normal Pressure 25-320, DIN 3333
Semi-Rotary Double Acting Pump, DIN 5437 sh 1
Semi-Rotary, Quadruple Acting Pump, DIN 5437 sh 2

*Union of Soviet Socialist Republics*

Equipment for Vertical Cylindrical Tanks for Petroleum Products. Ventilation Fittings, GOST 3689-47
Equipment for Vertical Cylindrical Tanks for Petroleum Products. Inlet and Outlet Fittings, GOST 3690-47
Equipment for Vertical Cylindrical Tanks for Petroleum Products. Breather Valves, GOST 3691-47
Equipment for Vertical Cylindrical Tanks for Petroleum Products. By-Pass Valves, GOST 3725-47
Equipment for Vertical Cylindrical Tanks for Petroleum Products. Level Measuring Gage, GOST 3727-47
Equipment for Vertical Cylindrical Tanks for Petroleum Products. Cast Iron Flap-Lids, GOST 3744-47
Equipment for Vertical Cylindrical Tanks for Petroleum Products. Side Command for Flap-Lids, GOST 3745-47
Equipment for Vertical Cylindrical Tanks for Petroleum Products. Roller Pulley, GOST 3847-47
Equipment for Vertical Cylindrical Tanks for Petroleum Products. Hand Winches, GOST 3848-47
Equipment for Vertical Cylindrical Tanks for Petroleum Products. Cast-Iron Hinges and Pipes, GOST 3849-47
Milk Storage Tanks, GOST 3928-47

## 621.8 Machine Parts, Means of Attachments, Etc

*Austria*

Gears, ONORM M6702

*Czechoslovakia*

Screw Threads, CSN 1001

*Germany*

Graphical Representation of Screws and Nuts in Steel Construction, DIN 407

*Hungary*

All Kinds of Nails From Plain Wire Nails to Fancy Upholstery Nails, MOSz 2615 through 2630, 2639, 3300

*Union of Soviet Socialist Republics*

Wire Nails, GOST 283-48
Precision Nuts. Specification, GOST 3756-47
Wire Nails, GOST 4028-48, 4035-48

## 621.9 Machine Tools. Tools. Operations, in Particular for Metal and Wood

*Germany*

Squares for Machine Tools, DIN 10
Gear Cutters, DIN 858
Files, DIN 8341
Diameters of Drills for Screw Holes, DIN 336
Chucks and Clamps for Punch Press, DIN 9827
Light Metal Hammers, DIN 6491
Special Feet With Threaded Shanks, DIN 6320
Milling Cutters, DIN 8003
Rules for Acceptance Checking of Various Machine Tools, DIN 8642/3; DIN 8645/6
Brace-Drill With and Without Ratchet, DIN 7241

*Sweden*

Straight Cup Grinding Wheel, SMS 391
Press Tools. Round Cushion Blank, SMS 844
Press Tools. Rectangular Plate Holder Top and Bottom Parts, SMS 846/7
Press Tools. Cushion Holder With Brace Bits for Rectangular Tools, SMS 848/9
Cutting Tools, SMS 956

*Union of Soviet Socialist Republics*

Milling Cutters, Various Types. Specifications, GOST 1695-48
Fine-Teeth Milling Cutters, GOST 3752-47
Fine-Teeth Shell End Mills, GOST 3753-47
Heavy Shell End Mills, GOST 3754-47
Side Milling Cutters. Dimensions, GOST 3755-47
Various Types of Cutting Tools for Semi-Automatic and Automatic Turret Lathes, GOST 3786-47—3805-47
Side Milling Cutters, Diameter From 250 to 600 Mm, With Inserted Teeth of High Speed Steel, GOST 3876-47
End Mills With Straight Shank. Dimensions, GOST 3958-47
End Mills With Taper Shank. Dimensions, GOST 3959-47
Single Angle Milling Cutters. Dimensions, GOST 3960-47
Double Angle Milling Cutters. Dimensions, GOST 3961-47
Half Circle Convex Milling Cutters. Dimensions, GOST 3962-47
Half-Circle Concave Milling Cutters. Dimensions, GOST 3963-47
Plain Slotting Cutters. Dimensions, GOST 3964-47
Double Angle Milling Cutter, for Forming Spiral Flutes on Milling Cutters, GOST 3966-47
Set Screws for Calendars. Standard Diameter and Threads, GOST 3968-47
Twist Drills. Short. Straight Shank, GOST 4010-48
Standard Keyways for Cutters, GOST 4020-48
Keyway Broaches With Notched Shank, GOST 4043-48
Round Broaches With Shanks for Quick Changing Chucks, GOST 4044-48
Circular Saws for Metal, With Segment Teeth. Dimensions, GOST 4047-48
Circular Saws for Metal, With Segment Teeth. Specifications, GOST 4048-48
End Mills. Specifications, GOST 4049-48
Angle Milling Cutters. Specifications, GOST 4050-48
Convex and Concave Milling Cutters. Specifications, GOST 4051-48
Pruning Saws, GOST 4156-48
Budding Pocket Knives, GOST 4228-48
Grafting Pocket Knives, GOST 4229-48
Pruning Pocket Knives, GOST 4230-48

## 622 Mining

*Germany*

Protective Globe for Round Lamp, DIN 22426
Steel Pounder, DIN 21566
Shafts for Well Drilling Pumps, DIN 9557
Section Through Galleries, DIN 21531
Steel Arches, DIN 21533
Fish Plates, DIN 21542
Fish Plates, DIN 21543
Round Glass Globe, DIN 22426
Wagon, Small, DIN 20550
Wagon, Large, DIN 20570

## 625 Techniques of Traffic Routes on Land

*France*

Wheel Tires. Tolerances, NF F01-052
Square Shaft Type "Bernie" for Car Locks, NF F01-054
Air Brake Triple Valve for Driving and Trailing Equipments, Various Types, NF F11-008 through F11-012
Ceiling Electric Fixture, NF F12-001
Flanged Outlet Connector, 100 Mm i.d. for Tank Wagons Transporting Bituminous Products, NF F37-009
Name and Date Plate for Tank Wagons, NF F37-010
Signal Petard, NF F54-001
Hammers for Sound Testing Rails, NF F76-011
Anchor Bolts, NF F05-004
Brushes for Greasing Fish Plates, NF F76-023

*Hungary*

Narrow Gage Railway Track on Steel Sleepers, MOSz 2820
Narrow Gage Railway Track on Wooden Sleepers, MOSz 2825
Steel Casting Wheels Series F, G, and H, MOSz 2851-2853
Normal Gage Rails. Material, Production and Production Control. Specifications, Testing. Railroad and Tramway Types. Dimensions, MOSz 2570 through 2576

## 629.1 Locomotion. Transport Engineering

*Germany*

Light Pipe Fittings. Liners, DIN 7608
Light Pipe Fittings. DIN 7609
Light Pipe Fittings. Pipe Caps, DIN 7610
Light Pipe Fittings. Double Unions, DIN 7611
Light Pipe Fittings. Double Unions, DIN 7611 sh 1

### 629.1 Locomotion, Transport Engineering (continued)

Light Pipe Fittings. Reduction Union. Blank of Light Metal, DIN 7612 sh 1
Light Pipe Fittings. Flanged Union, DIN 7614
Light Pipe Fittings. Lead Flanged Union, DIN 7615
Light Pipe Fittings. Flanged Double Union, DIN 7616
Light Pipe Fittings. Flanged Double Union. Blank of Light Metal, DIN 7616 sh 1
Light Pipe Fittings. Weldable Union, DIN 7617
Light Pipe Fittings. Ring Union Blanks of Light Metal, DIN 7621 sh 1
Light Pipe Fittings. Screw Reduction Union. Blank of Light Metal, DIN 7627 sh 1

*Hungary*

Automobiles. Positions of Gear Shift Lever, MOSz 287
Automobiles. Brake Lining, MOSz 288
Automobiles. Threaded Plugs, MOSz 375

### 629.11 Land Vehicles. Transport Engineering

*Germany*

Bicycle Saddle Stem, DIN 79141
Automatic Coupling for Trailer, DIN 74051
Bicycle Frame, DIN 79052
Wrench Openings, DIN 70506
Front Wheel Brake, DIN 79386 sh 1
Front Wheel Brake. Details, DIN 79386 sh 2
Handlebars, DIN 79351

*Sweden*

Bicycle Front Fork Steering Column. Types, Assembly and Parts, SMS 1310-11, 1313-18, 1321-23, 1325-26, 1328-30
Inner Tube for Bicycle Wheels, SMS 1379
Bicycle Pedaling Mechanism Assembly and Parts, SMS 1390 through 1394, 1404

*Union of Soviet Socialist Republics*

Bicycle Tool Kit, GOST 3905-47, 3907-47
Bicycle's Saddle. Basic Dimensions, GOST 4068-48

### 667 Dyeing and Bleaching Industries

*Germany*

Painter's Tools: Spatula, Putty Knives, Paint-Mixing Knives, DIN 7216

*The Netherlands*

Dry Pigments. Method of Tests. Lithopon I, N 879
Dry Pigments. Method of Tests. Red Lead, N 881
Dry Pigments. Method of Tests. Iron Oxide, N 882
Dry Pigments. Method of Tests. Ocher, Umber and Sienna, N 883
Dry Pigments. Method of Tests. Chrome Yellow, N 884
Dry Pigments. Method of Tests. Prussian Blue, N 885
Dry Pigments. Method of Tests. Bremen Green, N 886

### 675 Leather Industry. Leather Dressing

*France*

Leather. Sampling and Various Mechanical Tests, G 52-001 through G 52-009
Leather. Various Chemical Tests, G 52-201 through G 52-214

## Consumer-Retailer Group Studies Informative Labeling

A series of informal surveys on subjects of importance to consumers and retailers has been undertaken by the National Consumer-Retailer Council, Inc.

The first questionnaire concerns the use of informative labeling and is designed to discover to what extent readers of *NCRC News* find and buy informatively labeled articles. The reader is asked to list the articles he bought within a selected month which were informatively labeled in whole or in part, and to check what type of information was given—brand name, performance, construction, composition, care, and uses.

On the questionnaire, "performance" covers "what the product will do", such as its degree of color permanence; shrinkage or stretching; breaking strength; seam slippage; resistance to water, perspiration, wind, wear; light, heat, and power tests; power consumption; cost of upkeep; etc.

The term "construction" covers "how the product is made", such as size, weight, number of threads per inch, ply, weave, number of stitches per inch, finish, cut, hand or machine made, pressed, molded, stamped, inlaid, etc.

"Composition" includes "what the product is made of", such as kind and quality of fiber, metal, wood, leather, ceramics, rock, fur, plastics, petroleum products, rubber, paper, bone, chemicals, drugs, etc.

The term "care" includes instructions for washing or cleaning or both; precautions to be observed in cleaning and storage; refrigeration; oiling and greasing; polishing; etc; while "uses" refers to the purpose for which the product is suitable; recipes; and so forth.

## Grandstand Code Requirements Clarified

A revision to clarify the method of computing wind loads on grandstands, requirements for aisles, and provisions for ways of egress has just been approved in a new edition of the American Standard for Grandstands, Tents and Other Places of Outdoor Assembly. The original standard, approved in 1946, resulted from the Hartford circus fire of 1944. This fire focused attention on the fact that places of outdoor assembly were in general not regulated to the same extent as indoor places of assembly. The standard was developed in response to a demand for recommendations that would serve as a basis for local regulations.

Two years' experience with the standard indicated that clarification of certain provisions would be helpful to the enforcing official. Among the sections needing clarification were those dealing with the method of computing wind loads on grandstands, number and width of aisles, steps in aisles, and the general requirements for ways of egress from places of outdoor assembly.

Approval of this standard provides up-to-date information. However, proposals have been made for combining it and the American Standard Specifications for Portable Steel and Wood Grandstands, Z20.1-1941. Under study, too, are some of the new developments such as the trailer-mounted seating used by Ringling Brothers and Barnum and Bailey Circus, use of light gage and tubular steel in grandstands, and grandstands of the folding type.

## Netherlands Forms Traffic Institute

A scientific study of traffic and transport problems will be undertaken by the newly formed Netherlands Traffic Institute.

Members of the Institute, which includes transport concerns, public service groups, and private organizations, form the General Assembly.

Sections are being formed to study general economics, industrial economics, geography, technics, statistics, and documentation on traffic and transport matters. Among the other activities under way are the formation of a committee for nomenclature, and a study of the consequences on traffic and transport of the economic union with Belgium.

# How to Assure Safe Use of Methyl Chloride

**by H. H. Schrenk**

***H. H. Schrenk,*** *Scientist Director of the Division of Industrial Hygiene, U. S. Public Health Service, was chairman of the subcommittee that developed the American Standard Allowable Concentration of Methyl Chloride.*

LABORATORY investigations and practical experience have shown that the human body can detoxify, destroy, eliminate, or otherwise handle a certain amount of any material without measurable damage. This fact is the foundation on which procedures for the control of atmospheric contaminants are based. However, it is necessary to determine the concentrations of materials that can be handled by the human body in order to know the extent to which control procedures should be instituted.

This has led to the development of maximum allowable concentrations of contaminants, which have essentially the same signficance to the industrial hygienist as strength of materials has to a construction engineer. When equipment or procedures for the safe handling of chemicals are designed, information on the physiological properties is of equal importance to the chemical and physical properties if adequate safeguards to prevent injury are to be provided.

The maximum allowable concentration is the concentration that can be tolerated without injury throughout the working day over an indefinite period of time. The data on which such concentrations are based are obtained from many sources, and the ASA Sectional Committee on Allowable Concentrations of Toxic Dusts and Gases, Z37, serves as a clearing house where such information can be assembled and reviewed and a decision made regarding an acceptable, allowable limit. Such limits are not static but are subject to revision whenever additional information warrants reconsideration.

Methyl chloride is used as a refrigerant, as a catalyst solvent in the synthetic rubber industry, as an extractant for greases, oils, and resins, as a dewaxing agent in the petroleum-refining industry, and as an agent for methylation, chlorination, and other reactions utilized in the preparation of various organic chemicals. Its widespread industrial applications and knowledge of its toxicity emphasize the need for establishing a maximum allowable concentration for this compound.

The main hazard associated with the handling of methyl chloride is from absorption by inhalation. While acute poisoning may result from a single exposure to high concentrations, chronic poisoning from repeated exposures to lower concentrations is more significant. Symptoms that may be encountered are increasing fatigue, loss of appetite, drowsiness, muscular weakness, staggering gait, mental confusion, vertigo, visual disturbances, nausea, slurred speech, convulsions, and coma.

Values suggested for the maximum allowable concentration of methyl chloride have ranged from 100 to 500 parts per million. After careful consideration of available toxicological data and experience in handling methyl chloride in industry, it was decided that: "The maximum allowable concentration of methyl chloride shall be 100 parts per 1,000,000 parts of air by volume corresponding to 0.2 milligram per liter at 25 C and 760 mm pressure, for prolonged exposures not exceeding a total of eight hours daily."

Past experience in handling methyl chloride in industry indicates that this standard is a practical one and can be met with engineering procedures that are now available.

## Application of Standard

Methyl chloride or monochloromethane is a gas at ordinary temperature and pressure and therefore is readily disseminated into the air. It has no distinctive warning properties when present in air in dangerous concentrations; therefore one may be unaware that injurious amounts are being absorbed. To prevent injurious exposures, it is necessary to determine the concentration of methyl chloride in the breathing zone of exposed persons. Methods are available for the collection and analysis of individual samples and for continuously recording the concentration. The results of the determination of the concentration of methyl chloride in air interpreted in terms of the maximum allowable concentration can be used to evaluate the hazard. By following this procedure and applying control measures where excessive concentrations are found, injurious exposures may be avoided.

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The new American Standard Allowable Concentration of Methyl Chloride, Z37.18-1949, is the eighteenth in a series of national standards that define the amount of various toxic dusts and gases that can safely be permitted in the air of work places. This series of standards is being developed under the procedure of the American Standards Association by a committee of scientists and medical men with national reputations for work in improving industrial health conditions. William P. Yant, Director of Research, Mine Safety Appliances Company, is chairman of the Sectional Committee on Allowable Concentrations of Toxic Dusts and Gases. Dr C. D. Selby, Medical Consultant of the General Motors Corporation, is vice-chairman, and Henry G. Lamb, safety engineer of the American Standards Association, is secretary. The Bureau of Mines, U. S. Department of the Interior, as Endorsing Sponsor, recommended approval of the methyl chloride standard.

In addition to approval of the new standard on methyl chloride, action was taken recently to make available for peacetime use the standards defining allowable concentrations for xylene, and for manganese, both of which were originally approved as American War Standard in 1943. No changes have been made in the peacetime editions.

Other standards in this series define the allowable concentrations for carbon monoxide, hydrogen sulfide, carbon disulfide, benzene, cadmium, chromic acid, and chromates, mercury, lead and certain of its inorganic compounds, toluene, oxides of nitrogen, methanol, styrene monomer, formaldehyde, and trichloroethylene.

Copies of the American Standard Allowable Concentration of Methyl Chloride, Z37.18-1949; American Standard Allowable Concentration of Xylene, Z37.10-1948; and American Standard Allowable Concentration of Manganese, Z37.6-1948 are available from the American Standards Association at 35 cents each.

# An Aid to Cities for Use of New Building Techniques

**By J. H. Courtney***

THE general pattern of administrative requirements for building codes has become fairly well established in recent years. The topics covered are about the same in any code. They may be arranged differently in different codes and may vary in details but the general pattern is at once apparent. This uniformity results largely from interchange of model codes and standards on the subject and through interlocking committee memberships.

In view of this fact, it would not be expected that drastic changes would be necessary in the recently revised American Standard Administrative Requirements for Building Codes, A55.1-1948.

The standard originally approved in 1944 received long and thorough study in committee. The present revision represents experience with its use over the four-year period and an earnest attempt to harmonize its requirements with the recommendations of other organizations in this field.

A thorough review of the standard was made by a special subcommittee. From its study, and from comments solicited from other committee members, the subcommittee prepared a draft of recommended revisions. These were considered by the sectional committee and adopted with some later changes. The subcommittee was aided by the advice of consultants to the National Housing Agency, who were specialists in the administration field.

The principal revisions aside from arrangement are in sections dealing with the qualifications of the building official, alternate materials and constructions, tests, board of appeal, and the addition of explanatory appendix material.

Recognizing the desirability of attracting technically trained men to the building department, the committee has reduced from ten to five years the experience deemed necessary to qualify for the office of building official. In so doing, the committee was mindful of the limited number of applicants for the post in the smaller towns. Moreover, the requirement is a minimum and cities adapting the standard to local codes are free to stiffen the qualification requirements as much as they like.

If cities are to keep abreast of changes in building techniques, provisions for the use of new materials and improved methods of construction are a must in any code that claims to be up to date. The original standard contained such provisions. As revised, more adequate provision is made for prefabricated construction. And, whereas formerly approval of new types of constructions that had passed the required tests was discretionary with the building official, such approval under the revised standard is now made mandatory, if the constructions meet the requirements of the code for safety and health. Some clarification of the provisions for tests of new materials was also found desirable.

The provisions for a board of appeal in the original standard were based on the best information available at the time of its adoption. However, further study indicates that some of the requirements would be difficult to meet in the smaller towns. Hence, the revised standard requires that board members shall be qualified by experience and training to pass upon matters pertaining to construction, instead of specifying the occupational qualifications as was done before. It also reduces the quorum of the 5-man board from 5 to 4; and reduces the required vote needed for favorable action from 4 to 3. Further study of the basis upon which an appeal could be taken resulted in the present version, wherein any person aggrieved may appeal from any decision of the building official. This contrasts with the original standard in which the causes for appeal were itemized. Public hearings on appeals from a decision are also required in the revised standard.

The American Standard Administrative Requirements for Building Codes, A55.1-1948, was prepared by an ASA committee of the national groups concerned, and sponsored by the American Municipal Association and the Building Officials Conference of America, Inc.

*Washington representative of ASA and liaison engineer with National Bureau of Standards on Building Code Standardization Work.

## Top Technical Position Vacant at Engineer Research and Development Laboratories

Applications are being reviewed for the senior scientific and technical position at the Engineer Research and Development Laboratories, Corps of Engineers, U. S. Army, Fort Belvoir, Virginia, as announced by the commanding officer, Colonel John C. Arrowsmith.

The newly created position, Director of Research and Development, is open to individuals with at least 15 years' experience, exclusive of graduate work, ten of which should have been in research or as a research or development engineer. Five of the 15 years' experience should have been as the chief of a branch or department of a research and development organization with administrative and technical responsibility.

The Director, who will receive a salary of $12,500 per year, will be chairman of the Research Council, a panel of some seven key technical personnel in the Laboratories whom he will guide in the prosecution of the ERDL research and development programs.

Responsibilities include all matters involving the technical and scientific aspects of the current research and development program in such varied fields as civil, electrical, mechanical, and military engineering, physics, and physical and organic chemistry. The Director will also be responsible for the maintenance of liaison, on high levels of authority with other Arms and Services, and with industrial and educational research organizations, and scientific and engineering societies.

The applicant for the position should be a leader in one of the major scientific fields included in the work of the Laboratories, as attested by the positions he has previously held, the caliber of the organizations with which he has been associated, and his published works.

Interested persons are invited to make application by April 15, either in person or by letter setting forth their qualifications, to the Commanding Officer, Engineer Research and Development Laboratories, The Engineer Center and Fort Belvoir, Fort Belvoir, Virginia.

## Change in Ratings Accepts War Usage For Class 125 Cast-Iron Pipe Fittings

A revised edition of one of the oldest standards of the pipe and fittings industry, tracing its origins to the standardization work done by the American Society of Mechanical Engineers in 1894, was approved recently by the American Standards Association. The revision brings the 1939 edition of the American Standard Cast-Iron Pipe Flanges and Flanged Fittings, Class 125, in line with an American War Standard edition issued in 1943 by changing the ratings of the fittings to conform to those established by the war standard.

The designation of the standard has been changed from B16a-1939 to B16.1-1948. "This is a significant change and should be given wide publicity," says Lester W. Benoit, secretary of Sectional Committee B16, "as the old number B16a is deeply embedded in the minds of all piping people and is also printed in many Codes and Regulations, besides appearing in practically every trade catalog in the country covering these fittings."

Mr Benoit describes the work done in revising the standard as follows:

"The work on revising this standard originated in July 1946, with the MSS (Manufacturers Standardization Society of the Valve and Fittings Industry) 'Ferrous Flange' Committee acting as the working group for sectional committee B16. They reported their findings in April 1947 and as a result printer's proofs (dated June, 1947) were sent to Subcommittee No. 1 in July for their study and recommendations. Subcommittee No. 1's review resulted in a new proof (October, 1947) which was presented to the main sectional committee in December. After their approval it was presented to the sponsors in May 1948, who subsequently sent it to the American Standards Association with the recommendation that it be approved and promulgated as an American Standard in August, 1948." The standard was approved by ASA in November 1948.

The American Standard, Cast-Iron Pipe Flanges and Flanged Fittings, Class 125, B16.1-1948, has now been published by the American Society of Mechanical Engineers and is available from the American Standards Association and the ASME at 65 cents per copy.

The work on this standard and other standards developed by the Sectional Committee on Pipe Flanges and Flanged Fittings, B16, is carried out under the joint sponsorship of the American Society of Mechanical Engineers, the Manufacturers' Standardization Society of the Valve and Fittings Industry, and the Heating, Piping, and Air Conditioning National Association.

## Reginald L. Jones

With regret the American Standards Association announces the death of Reginald L. Jones, electrical engineer and vice-president of the Bell Telephone Laboratories. One of Mr Jones's most outstanding contributions in the work of the ASA had been as chairman of the Standards Council Planning Committee which was appointed in 1944 to study postwar operations of the ASA. The recommendations made after two years of deliberation have enabled the ASA to greatly improve its services to members and the national organizations participating in standards work.

In his 38 years with the Bell System, Mr Jones contributed many ideas and methods leading to improvement in telephone equipment and quality of transmission. He first joined the Western Electric Company's engineering department in 1911, and in 1914 he was put in charge of research in telephonic transmission.

During World War I, Mr Jones worked with the Navy's antisubmarine board. He headed Western Electric's laboratory for submarine detection and contributed materially to the development of devices for detecting submarines.

In 1923, he became inspection manager of the department and developed what are said to be the first techniques for scientific control of the quality of manufactured products. Western Electric's engineering department became the Bell Telephone Laboratories in 1925 and Mr Jones was made director of apparatus development for the new organization. In 1944, he was appointed vice-president in charge of staff.

Representing the Telephone Group and the American Institute of Electrical Engineers in the ASA, Mr Jones served on many sectional committees in addition to being a member of the Standards Council, the Electrical Standards Committee, the Board of Examination, and the Company Member Conference.

## April 14—A Date for Member-Body Executives

How to improve ASA operations will be the subject of the next meeting of the Conference of Executives of Member-Bodies of the American Standards Association on April 14 in New York. This round table discussion will be open only to CEOM members to give them an opportunity to exchange their views on current ASA policies.

## Gaillard Seminar Will be Repeated

The private five-day seminar on industrial standardization held January 24 through 28, 1949, in the Engineering Societies Building, New York, by Dr John Gaillard, mechanical engineer on the ASA staff and lecturer at Columbia University, was attended by representatives of the Army Services Medical Procurement Agency; Caterpillar Tractor Company; Diamond Chain Company, Inc; Allen B. Du Mont Laboratories, Inc; Hamilton Watch Company; Hotpoint, Inc; Link-Belt Company; Mechanical Handling Systems, Inc; and Minneapolis-Honeywell Regulator Company. The continued interest of industry has led Dr Gaillard to schedule another seminar from June 20 through 24, 1949, at the same place. Details may be obtained and advance reservations made, by writing him at his home address, 400 West 118th Street, New York 27, N. Y., or by phoning him at the ASA office, Murray Hill 3-3058.

## Transformer Revision Now Available

On January 5, 1949, the American Standard for Distribution, Power, and Regulating Transformers and Reactors other than Current Limiting Reactors, C57.12-1949, was approved.

This standard is one of a group of 18 standards concerning induction apparatus. The other 17 standards were published in a binder and made available in 1948. This new standard, C57.12, will be available for sale only as part of the whole group of 18 standards. Those who have already purchased the first 17 may obtain the revision free of charge by returning the postcard enclosed in their copies.

# ASA STANDARDS ACTIVITIES

## Status as of January 28, 1949

### American Standards Approved Since January 5, 1949

Markings for Grinding Wheels and Other Bonded Abrasives, B5.17-1949 (Revision of B5.17-1944)

*Sponsors:* Society of Automotive Engineers; Metal Cutting Tool Institute; National Machine Tool Builders Association; American Society of Mechanical Engineers

Laminated Phenolic Products, C59.16-1949 (Revision of C59.16-1944)

Practice for Machinery and Punching of Laminated Phenolic Plate, C59.17-1949 (Revision of C59.17-1944)

*Sponsor:* American Society for Testing Materials

Schedules of Preferred Ratings for Power Circuit Breakers, C37.6-1949 (Revision of C37.6-1945)

*Sponsor:* Electrical Standards Committee

Specifications for Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves, and Parts for High Temperature Service, G37.1-1949 (Revision of G37.1-1947)

*Sponsor:* American Society for Testing Materials

Specifications for Salt-Water Soap (ASTM D 593-42; K60.13-1949)

Specifications for Liquid Toilet Soap (ASTM D 799-45; K60.14-1949)

Specifications for Olive Oil Chip Soap (Type A, Pure; Type B, Blended) (ASTM D 630-42; K60.15-1949)

Specifications for Palm Oil Chip Soap (Type A, Straight; Type B, Blended) (ASTM D 536-42; ASA K60.16-1949)

Specifications for Modified Soda (Sesquicarbonate Type) (ASTM D 457-39; ASA K60.17-1949)

Specifications for Sodium Metasilicate (ASTM D 537-41; ASA K60.18-1949)

Specifications for Sodium Sesquisilicate (ASTM D 594-41; ASA K60.19-1949)

Specifications for Tetrasodium Pyrophosphate (Anhydrous) (ASTM D 595-45; ASA K60.20-1949)

Methods of Sampling and Chemical Analysis of Special Detergents (ASTM D 501-46; ASA K60.21-1949)

*Sponsor:* American Society for Testing Materials

Incandescent Lamps for General Service for 115-, 120-, and 125-Volt Circuits, C78.100-1949

Incandescent Lamps for General Service for 230- and 250-Volt Circuits, C78.101-1949

Incandescent Lamps for Train, Locomotive, and Country Home Service, 30-34 and 60-64 Volts, C78.102-1949

Incandescent Lamps for Street Railway Service, C78.103-1949

Incandescent Lamps for Spotlight and Floodlight Service, 115, 120, and 125 Volts, C78.105-1949

Infrared Lamps for 115-125 Volt Service, C78.106-1949

Incandescent Projector and Reflector Spotlight and Floodlight Lamps, 115, 120, and 125 Volts, C78.107-1949

Incandescent Lamps for Street Series Service, C78.109-1949

S-6 Bulb, Candelabra Screw Base and C-7 Bulb, Candelabra Screw Base, C78.200-1949

S-11 Bulb, Medium Screw Base, C78.201-1949

S-11 Bulb, Intermediate Screw Base, C78.202-1949

S-14 Bulb, Medium Screw Base, C78.203-1949

A-15 Bulb, Medium Screw Base, C78.204-1949

A-17 Bulb, Medium Screw Base, C78.205-1949

A-19 Bulb, Medium Screw Base, Overall Length: Maximum 3 15/16 Inches, Minimum 3 9/16 Inches, C78.206-1949

T-6½ Bulb, Intermediate Screw Base, C78.207-1949

T-10 Bulb, Medium Screw Base, C78.208-1949

T-10 Reflector Bulb, Medium Screw Base, C78.209-1949

A-19 Bulb, Medium Screw Base, Overall Length: Maximum 4¼ Inches, Minimum 3⅞ Inches, C78.210-1949

A-19 Bulb, Medium Screw Base, Overall Length: Maximum 4 7/16 Inches, Minimum 4 1/16 Inches, C78.211-1949

T-8 Bulb, Medium Screw Base, C78.212-1949

PS-25 Bulb, Three-Contact Medium Screw Base, C78.213-1949

PS-25 Bulb, Three-Contact Mogul Screw Base, C78.214-1949

A-21 Bulb, Medium Screw Base, Overall Length: Maximum 4 7/16 Inches, Minimum 4⅛ Inches, C78.215-1949

A-21 Bulb, Medium Screw Base, Overall Length: Maximum 5 5/16 Inches, Minimum 4 5/16 Inches, C78.216-1949

A-21 Bulb, Medium Screw Base, Overall Length: Maximum 4 15/16 Inches, Minimum 4 9/16 Inches, C78.217-1949

A-23 Bulb, Medium Screw Base, C78.218-1949

G-30 Bulb, Three-Contact Mogul Screw Base, C78.219-1949

PS-25 Bulb, Medium Screw Base, C78.220-1949

PS-30 Bulb, Medium Screw Base, C78.221-1949

PS-35 Bulb, Mogul Screw Base, C78.223-1949

PS-40 Bulb, Mogul Screw Base, C78.224-1949

PS-52 Bulb, Mogul Screw Base, C78.225-1949

P-25 Bulb, Medium Screw Base, C78.226-1949

G-30 Bulb, Medium Screw Base, C78.233-1949

G-40 Bulb, Mogul Screw Base, Overall Length: Maximum 7 1/16 Inches, Minimum 6½ Inches, C78.234-1949

G-40 Bulb, Mogul Screw Base, Overall Length: Maximum 8 Inches, Minimum 7 7/16 Inches, C78.235-1949

R-40 Bulb, Medium Skirted Screw Base, C78.236-1949

R-40 Bulb, Medium Screw Base, C78.237

PAR-38 Bulb, Medium Skirted Screw Base, C78.238-1949

PS-25 Bulb, Mogul Screw Base, C78.245

T-64 Bulb, Mogul Bipost Base, C78.248

G-30 Bulb, Medium Skirted Screw Base, C78.249-1949

Miniature Incandescent Lamps, C78.140-1949

*Sponsor:* Electrical Standards Committee

### Standards Being Considered for Approval

#### By the Standards Council—

Plumbing Code, A40.7

*Sponsors:* American Public Health Association; American Society of Mechanical Engineers

Sound Focusing Test Film for 35-Millimeter Motion Picture Sound Reproducers (Service Type), Z22.61

*Sponsor:* Society of Motion Picture Engineers

#### By the Board of Review—

Unified and American Screw Threads for Screws, Bolts, Nuts and Other Threaded Parts, B1.1 (Revision of B1.1-1935)

*Sponsors:* American Society of Mechanical Engineers; Society of Automotive Engineers

Straight Cut-Off Blades, B5.21

*Sponsors:* Society of Automotive Engineers; Metal Cutting Tool Institute; National Machine Tool Builders Association; American Society of Mechanical Engineers

#### By the Board of Examination—

Specifications for Copper Pipe, Standard Sizes (ASTM B 42-47; ASA H26.1)

Specifications for Red Brass Pipe, Standard Sizes (ASTM B 43-47; ASA H27.1)

Specifications for Bronze Castings in the Rough for Locomotive Wearing Parts (ASTM B 66-46; ASA H28.1)

Specifications for Car and Tender Journal Bearings, Lined (ASTM B 67-46; ASA H29.1)

Specifications for Copper-Silicon Alloy Wire for General Purposes (ASTM B 99-47; ASA H30.1)

Specifications for Rolled Copper-Alloy Bearings and Expansion Plates and Sheets for Bridge and Other Structural Uses (ASTM B 100-47; ASA H31.1)

Specifications for Brass Wire (ASTM B 134-48; ASA H32.1)

Specifications for Leaded Red Brass (Hardware Bronze) Rods, Bars, and Shapes (ASTM B 140-47; ASA H33.1)

*Sponsor:* American Society for Testing Materials

Audiometers for General Diagnostic Purposes, Z24.5

*Sponsor:* Acoustical Society of America

Acetic Acid, Glacial, Z38.8.100

Sulfuric Acid, Z38.8.101

Citric Acid, Z38.8.102

Boric Acid, Crystalline, Z38.8.103

Hydrochloric Acid, Z38.8.104

Acetic Acid, 28 Percent, Z38.8.106

Hydroquinone, Z38.8.126

Para-Hydroxyphenylglycin, Z38.8.128

Sodium Thiosulfate, Anhydrous, Z38.8.250

Sodium Thiosulfate, Crystalline, Z38.8.251

Aluminum Potassium Sulfate, Crystalline, Z38.8.150

Chromium Potassium Sulfate, Crystalline, Z38.8.151

Formaldehyde Solution, Z38.8.152

Paraformaldehyde, Z38.8.153

Sodium Sulfate, Anhydrous, Z38.8.175

Sodium Acetate, Anhydrous, Z38.8.176

**Standards Being Considered for Approval by the Board of Examination (Continued)—**

Potassium Dichromate, Z38.8.177
Potassium Permanganate, Z38.8.178
Potassium Ferricyanide, Z38.8.179
Copper Sulfate, Z38.8.180
Potassium Persulfate, Z38.8.181
Sodium Sulfide, Fused, Z38.8.182
*Sponsor:* Optical Society of America

**By the Building Code Correlating Committee—**

Building Exits Code, A9.1 (Revision of A9.1-1946)
*Sponsor:* National Fire Protection Association

**By the Consumer Goods Committee—**

Determination of Small Amounts of Copper, Manganese and Nickel in Textiles, L14.49
Cotton Goods for Rubber and Pyroxylin Coating, L14.50
Air Permeability of Textile Fabrics, L14.51
Methods of Testing Wool Felt, L16.1 (Revision of L16.1-1945)
*Sponsors:* American Society for Testing Materials; American Association of Textile Chemists and Colorists

**By the Electrical Standards Committee—**

Electrical Indicating Instruments, C39.1 (Revision of C39.1-1938)
*Sponsor:* Electrical Standards Committee

## New Projects Submitted to ASA

Deep Well Vertical Pumps
Rotary Cone Valves
*Sponsor:* American Society of Mechanical Engineers

## Standards Submitted to ASA for Approval

Specifications for Malleable Iron Castings (ASTM A 47-47; ASA G48.1-1948)
Zinc-Coated (Galvanized) Iron or Steel Sheets (ASTM A 93-46; ASA G8.2-1947)
*Sponsor:* American Society for Testing Materials

## American Standards Being Considered for Reaffirmation

**By the Consumer Goods Committee—**

Method of Computing Food Storage Volume and Shelf Area of Automatic Household Refrigerators, B38.1-1944
*Sponsors:* Bureau of Home Nutrition and Home Economics, U.S. Department of Agriculture; American Society of Refrigerating Engineers

## American War Standards Withdrawn

Ceramic Radio Insulating Materials, Class L, C75.1-1943
Steatite Radio Insulators, C75.2-1943
Fixed Mica-Dielectric Capacitors, C75.3-1942
Ceramic Radio Dielectric Materials, Class H, C75.4-1943
External Meter Resistors (Ferrule Terminal Styles), C75.5-1943
Glass-Bonded Mica Radio Insulators, C75.6-1943
Fixed Composition Resistors, C75.7-1943
Glass Radio Insulators, C75.8-1943
Power-Type Wire-Wound Rheostats, C75.9-1944
Wire-Wound Variable Resistors (Low-Operating Temperatures), C75.10-1944
Crystal Unit CR-1 ( )/AR, C75.11-1944
Fixed Ceramic-Dielectric Capacitors (Temperature-Compensating Type), C75.12-1944
Dynamotors, C75.13-1944
Porcelain Radio Insulators, C75.14-1944
Toggle Switches, C75.15-1944
Fixed Paper Dielectric Capacitors (Hermetically Sealed in Metallic Cases), C75.16-1944
Method of Noise-Testing Fixed Composition Resistors, C75.17-1944

## Withdrawal of American Standards Being Considered

**By the Board of Examination—**

Specifications for Reduced Para Red (ASTM D 264-47; ASA A49.5-1940)
Specifications for Calcined Gypsum for Dental Plasters (ASTM C 72-40; ASA A65.1-1941)
*Sponsor:* American Society for Testing Materials

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# News About Projects

## Radio-Electrical Coordination, C63—

*Sponsor:* Electrical Standards Committee

A recommendation that the work of this sectional committee could be more satisfactorily carried out under the joint sponsorship of the National Electrical Manufacturers Association and the Radio Manufacturers Association rather than under the present sponsorship of the Electrical Standards Committee, has been made by the chairman of sectional committee C63. Accordingly, members of the Communications and Electronics Division of the Electrical Standards Committee have been asked to vote on this question.

## Office Standards, X2—

*Sponsor:* National Office Management Association

The scope of Subcommittee 3 on Forms, Records, and Procedures has been approved by its members. It reads as follows:

1. Office forms cover generally paper (cards, etc) used in the conduct of business which has been processed, e.g. by printing, ruling, perforating, punching, etc, to facilitate its use. The standards approach will be from the standpoint of physical specifications (of the form) and designs.
2. Office records cover generally forms, sheets, books, etc, on which entries have been made or information noted. This would include all forms of business reports. It does not include the blanks on which the record is to be made.
3. Office procedures cover generally the methods of conducting business. This includes procedural development, procedural issuances (such as manuals, handbooks, and administrative instructions), procedural installation, procedural measurement, and procedural audit. It applies to the procedure and its relation to the forms, records, equipment, and personnel involved in the procedure.

Chairmen have been appointed for several subgroups operating under the jurisdiction of Subcommittee 5 on Business Machines. They are:

O. H. Bossuet, Western Electric Company—accounting, adding, and billing machines;
C. W. Fellows, purchasing agent, Federal Reserve Bank of Richmond—addressing and mailing machines;
J. D. McWhorter, field service manager, U.S. Government Printing Office—reproducing and paper handling machines;
E. P. Strong, director of management service, University of Illinois—typewriters.

## Mining Standardization Correlating Committee—

The MSCC will meet in Pittsburgh on March 23. The question of a possible revision of the American Recommended Practice for Rock Dusting Coal Mines to Prevent Coal Mines Explosions, M13-1925, which was reaffirmed in 1942, will be considered at this meeting.

## Zinc Coating of Iron and Steel, G8—

*Sponsor:* American Society for Testing Materials

The American Standard Specifications for Zinc-Coated (Galvanized) Iron or Steel Sheets, G8.2-1947 (ASTM A93-46), for which the ASTM is proprietary sponsor, have been revised and issued as tentative by the Society's committee on corrosion of iron and steel. The revision is now being considered by the Board of Examination for approval as an American Standard.

## Petroleum Products and Lubricants, Z11—

*Sponsor:* American Society for Testing Materials

An editorial change has been made in the American Standard Viscosity-Temperature Charts for Liquid Petroleum Products, Z11.39-1943 (ASTM D341-43), which consists of a new viscosity temperature chart E covering temperatures from -100 F to -450 F and a kinematic viscosity range of 2.0 to 20,000,000 centistokes. All copies of the standard now have this chart included.

## Safety Code for Exhaust Systems, Z9—

General agreement has been reached as to the final form of a proposed standard for Open Tank Operations, by the Z9 subcommittee for the Safety Code for Exhaust Systems. A final draft is being prepared for submission to the committee and to the Z9 committee.

(News About Projects, continued)

### Textile Test Methods, L14—

*Sponsors:* American Association of Textile Chemists and Colorists; American Society for Testing Materials

Textile experts and the average housewife will soon be asked to help determine the degree of color change permissible in a fabric before it is considered too faded for further use.

In a survey to be conducted by a subcommittee on washfastness of colored textiles of sectional committee L14, technicians and consumers will examine certain sample fabrics which have been commercially laundered several times. Each fabric will be classified regarding its end use so that the examiner can think of it not as a piece of cloth but in terms of the use to which it will be put. For example, the top and bottom of a child's two-piece snow suit will be subjected to separate wash tests—the pants being laundered more often than the jacket. At what point will the difference in color between the two parts be considered too great to continue to use as an ensemble?

From these results, members of the subcommittee hope to discover what degree of color change is acceptable in a fabric and at what point it becomes unsatisfactory in the eyes of the consumer. Following this, the subcommittee will analyze what conditions led to this point of dissatisfaction in the sample and then attempt to create the conditions in a laboratory test procedure.

### Oxychloride Cement Flooring, A88—

*Sponsors:* American Society for Testing Materials; National Bureau of Standards

A draft for a proposed standard on the preparation of subflooring to receive finished flooring of magnesium oxychloride cement has been prepared by the subcommittee on specifications of sectional committee A88. It is expected that this draft will be offered to the sectional committee for acceptance during the next 90 days. Drafts for other standards within the scope of this committee are in course of preparation.

### Proposed New Projects—

The American Society of Mechanical Engineers has requested the organization of two new ASA sectional committees to cover deep well vertical pumps and rotary cone valves. The Society is prepared to accept sponsorship for both of these projects.

The need for these proposed projects has been called to the attention of the ASME by its Southern California Section in connection with the control of water for irrigation and power.

In its request for the new projects, the ASME suggests that a committee on deep well vertical pumps prepare standards of two classes—general types and special types—limiting itself to vertical type pumps.

In regard to the proposed project on rotary cone valves, the ASME suggests that a committee be organized to develop specifications for manually, hydraulically, or electric-motor operated rotary cone valves of sizes of 12 inches to 42 inches, inclusive, for cold water service in the 150- and 250-pound per square inch pressure classifications.

# New Appointments to Standards Council

R. C. Sogge | John Hellstrom | F. E. Harrell | Karl L. Fetters | Wallace V. Wolfe | Harry C. Plummer

Changes in the membership of the ASA Standards Council have resulted in the appointment of the following new representatives:

### American Institute of Electrical Engineers—

*F. E. Harrell*, manufacturing vice-president of the Reliance Electric and Engineering Company, will succeed W. P. Dobson for a three-year term.

### American Iron and Steel Institute—

*Dr Karl L. Fetters*, special metallurgical Engineer with the Youngstown Sheet and Tube Company, has been appointed to succeed T. F. Olt. He is a former Council representative and a present member of the Company Member Conference.

*Carl A. Burkhalter*, manager of the Standards and Practices Division of Wheeling Steel Corporation, named as an alternate, is also a member of the Company Member Conference.

*Charles L. Kent*, metallurgical engineer with Jones and Laughlin Steel Corporation, also an alternate, serves as a member-at-large on the sectional committee concerned with the standardization of wrought iron and wrought steel pipe and tubing, B36, and is a member of the Company Member Conference.

### Foundry Equipment Manufacturers Association, Inc—

*John Hellstrom*, vice-president of the American Air Filter Company, Inc., is also vice-president of the FEMA, which he represents on the Standards Council. In addition, he serves on the Mechanical Standards Committee.

### Manufacturers Standardization Society of the Valve and Fittings Industry—

*Lester W. Benoit*, general secretary of the MSS, has been named alternate to W. P. Kliment, succeeding L. W. Kattelle. He is already an active representative of the Society on numerous sectional committees dealing with mechanical engineering and drawing and drafting room practice.

### Motion Picture Research Council—

*Wallace V. Wolfe*, president of the Motion Picture Research Council, has been appointed MPRC representative replacing Wesley C. Miller for a three-year term. Mr. Miller will act as alternate.

### National Electrical Manufacturers Association—

*R. C. Sogge*, General Electric Company, has been appointed to replace the late L. F. Adams for his unexpired term. Mr Sogge's other activities in the ASA include his service on the Consumer Goods Committee, the Electrical Standards Committee, the Safety Code Correlating Committee, and the sectional committee on definitions of electrical terms, C42.

### Structural Clay Products Institute—

*Harry C. Plummer*, director of engineering and research at the Structural Clay Products Institute, has been named representative of his organization on the Council. As a member of the Building Code Correlating Committee and many sectional committees concerned with all phases of civil engineering and construction, Mr Plummer is a well-known figure in ASA circles.

*James A. Lee*, also of the Structural Clay Products Institute, has been appointed Mr Plummer's alternate. He is an alternate on the sectional committee working on a safety code for conveyors and conveying machinery, B20.

# *Some New*
# ARTICLES of FAITH
## for Industry & Business

"I BELIEVE that a business must be run at an adequate profit and must hold its own in fair competition with other businesses.

". . . within my sphere I will do my best to help keep my business prosperous and strong.

"I BELIEVE that business must serve employees, stockholders, consumers, and government and that management must keep the interests of all these elements in balance.

". . . to the extent of my authority I will try to preserve this balance.

"I BELIEVE that management's operating goals are continuously improved productivity and growth, in order to provide jobs, reward investors, attract capital, and provide more and better goods and services at lower cost.

". . . in any capacity in which I find myself I will work toward those goals.

"I BELIEVE further that the greatest assets of a business are its human assets and that the improvement of their value is both a matter of material advantage and moral obligation; I believe, therefore, that employees must be treated as honorable individuals, justly rewarded, encouraged in their progress, fully informed, and properly assigned, and that their lives and work must be given meaning and dignity, on and off the job.

". . . if I have the supervision of so much as one other person I will strive to honor these principles in practice.

"I BELIEVE that a reputation for integrity is another priceless asset of any business and that management must deal fairly with customers, competitors, and vendors, advertise truthfully, fulfill its commitments, co-operate with other managements in the betterment of business as a whole, and oppose any artificial restriction that may limit production, fix prices, or restrain trade.

". . . in my daily work I will try to deserve, and make my business deserve, a reputation for integrity.

"I BELIEVE that the future of the American economic system depends on the confidence, good will, and understanding of the people, and that business leadership must make itself a responsible part of the human community by participating in worthy activities, locally and nationally.

". . . as a representative of business and as an individual I will identify my business and myself with the welfare of people.

"I BELIEVE that whenever business has earned a hearing, it has not only a right but a duty to ask for public confidence, and that it must speak freely, give information gladly, and answer the attacks of those who seek to undermine American freedom under democratic capitalism.

". . . I will speak out in behalf of my business and the system which it represents.

"I BELIEVE, finally, that business leadership is nothing less than a public trust, that it must offer a message of courage and hope to all people, and that it can help an economically strong America to lead other nations to lasting prosperity, freedom, and peace.

". . . I will work not only for the advancement of myself, my family, and my country, but for liberty and democracy for America and for the world — now and in the years to come."

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WE BELIEVE, *here at Bristol Brass, that this is the most enlightened Code of Practice ever expressed by, or for, American industry and business. It comes from the mind and pen of* MR. CLARENCE FRANCIS, Chairman of the Board, General Foods, Inc. *And we regard it as a privilege . . . as well as a public service . . . to devote this page to the wider dissemination of these principles.*

*The* BRISTOL BRASS CORPORATION

*Makers of Brass, since 1850, in Bristol, Connecticut*

# New American Standards Available

| ASA Number | Title of Standard | Price |
|---|---|---|
| B16.1-1948 | **Cast-Iron Pipe Flanges and Flanged Fittings, Class 125** | $.65 |

In revising this standard, a complete study was made of the 1939 edition and the 1943 emergency war standard for the purpose of bringing the data in line with present practice. The section covering introductory notes has been completely revised and enlarged. Tables 4, 5, and 7 have been reduced to a common table, eliminating many duplicate dimensions, and the footnotes to all tables have been revised. Two new sizes of short body pattern reducing tees have been added, while the appendix has been deleted. (*Sponsors:* American Society of Mechanical Engineers; Heating, Piping, and Air Conditioning Contractors National Association; Manufacturers Standardization Society of the Valve and Fittings Industry)

| | | |
|---|---|---|
| H7.1-1948 | **Copper and Copper-Base Alloy Forging Rods, Bars, and Shapes, Specifications for (ASTM B124-48)** | .25 |

These specifications cover copper and copper-base alloy rods, bars, and shapes capable of being readily forged hot. Twelve alloys are specified. (*Sponsor:* American Society for Testing Materials)

| | | |
|---|---|---|
| H23.1-1948 | **Copper Water Tube, Specifications for (ASTM B88-48)** | .25 |

Seamless copper tubes especially designed for plumbing purposes, underground water services, etc, but also suitable for copper coil water heaters, fuel oil lines, gas lines, and so forth, are covered here. (*Sponsor:* American Society for Testing Materials)

| | | |
|---|---|---|
| H24.1-1948 | **Slab Zinc (Spelter), Specifications for (ASTM B6-48)** | .25 |

These specifications cover slab zinc (spelter) made from ore or other material by a process of distillation or by electrolysis, in six grades: special high grade, high grade, intermediate, brass special, selected, and prime western. They do not cover zinc produced by "sweating" or remelting of secondary zinc. (*Sponsor:* American Society for Testing Materials)

| | | |
|---|---|---|
| L4.1-1948 | **Bleached Cotton Bed Sheets and Pillow-cases, Specifications for** | .25 |

Quality standards for five types of sheets are defined in these specifications. They establish minimum thread count, breaking strengths for both warp and filling, indicating relative strength and durability of the fabrics; the maximum percent of sizing which may be added; the weight in ounces per square yard; the number of stitches per inch in the seams and hems. Methods of test and tolerances are also defined. (*Sponsor:* American Hospital Association)

| | | |
|---|---|---|
| Z21.1-1948 | **Domestic Gas Ranges, Approval Requirements for** | 2.00 |
| Z21.8-1948 | **Installation of Domestic Gas Conversion Burners, Requirements for** | 1.00 |
| Z21.9-1948 | **Hot Plates and Laundry Stoves, Approval Requirements for** | 1.00 |
| Z21.11-1948 | **Gas Space Heaters, Approval Requirements for** | $2.00 |
| Z21.17-1948 | **Domestic Gas Conversion Burners, Listing Requirements for** | 2.00 |
| Z21.21-1948 | **Automatic Main Gas-Control Valves, Listing Requirements for** | 1.00 |
| Z21.28-1948 | **Portable Gas Baking and Roasting Ovens, Approval Requirements for** | 2.00 |

These seven sets of revised requirements have been adopted to simplify and coordinate standard tests for performance and construction of gas-burning appliances. (*Sponsor:* American Gas Association)

| | | |
|---|---|---|
| Z37.18-1949 | **Allowable Concentration of Methyl Chloride** | .35 |

The purpose of this standard is to prescribe the maximum permissible concentration of methyl chloride in the atmosphere of work places for guidance in establishing control procedures for the protection of the health of workers. (*Endorsing Sponsor:* Bureau of Mines, U. S. Department of Interior)

| | | |
|---|---|---|
| Z38.1.3-1948 | **70-Millimeter Perforated (and Unperforated) Film, Dimensions for** | .25 |

The purpose of this standard is to provide a film for still pictures and various scientific recording instruments, such as oscillographs, electrocardiographs, seismographs, and similar instruments. In its development no consideration was given to its use for motion picture purposes. (*Sponsor:* Optical Society of America)

| | | |
|---|---|---|
| Z38.1.50-1948 | **Radiographic Intensifying Screens, Dimensions for** | .25 |

This standard is intended to cover any type of screen to be used in direct contact with x-ray film, whether it be of the fluorescent salt type or sheet metallic material. (*Sponsor:* Optical Society of America)

| | | |
|---|---|---|
| Z38.8.11-1948 | **Photographic Grade Thermometers** | .25 |

Both fluid and bimetallic types of thermometers are recognized in this standard which covers those of a grade suitable for use in the measurement of photographic solution temperatures with an accuracy suitable for photographic processing. (*Sponsor:* Optical Society of America)

| | | |
|---|---|---|
| Z38.8.19-1948 | **Determining Maximum Safe Temperatures for Photographic Processing Solutions, Method for** | .25 |

This standard defines a test method for determining approximately the maximum safe processing temperature for a given photographic material. (*Sponsor:* Optical Society of America)